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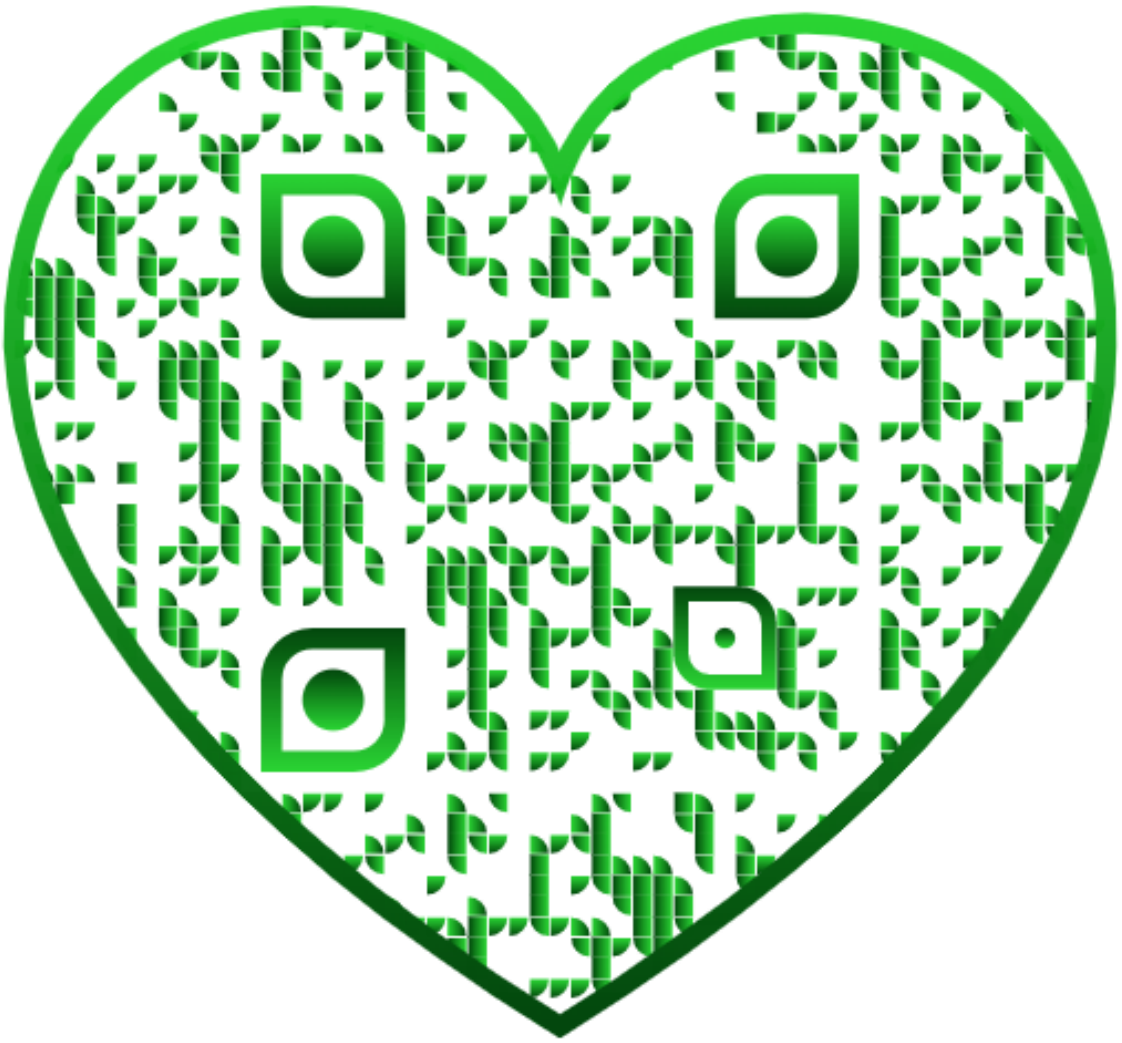

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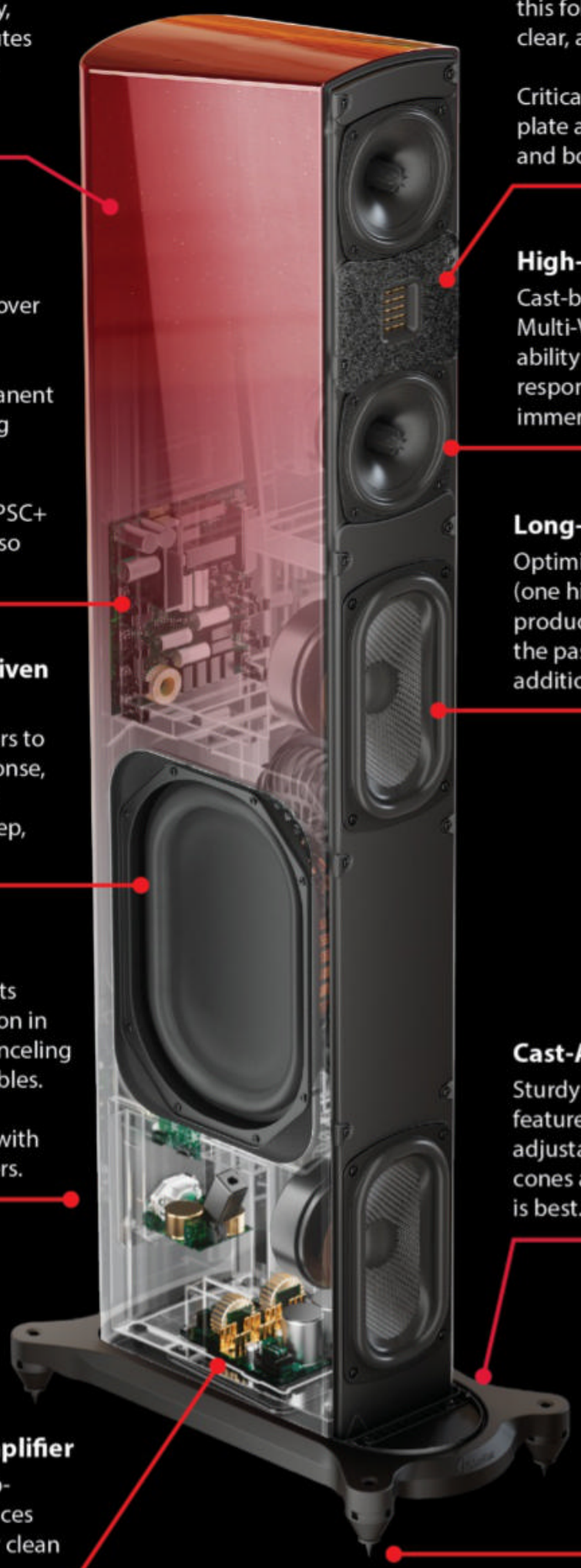

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Remixed Reality

IT'S AUGUST, and things sure are heating up in the AV world. No news sparked as much discussion as the announcement of Apple's forthcoming Vision Pro mixed reality headset, which promises to do many cool things but was met with some skepticism from the home theater crowd. Given that it is a VR helmet and costs $3500, immediate widespread adoption seems unlikely. However, one big hint is in the word "Pro". It leaves room for Apple to release something less expensive, perhaps a Vision Air.

The reason I'm discussing it at all is that Apple's presentation specifically mentioned you could use the Vision Pro to watch 3D movies. It's reasonable to guess that the ultimate way to watch *Avatar: The Way of the Water* will be while wearing this specific device. Now, skeptics say it is an isolating experience, but I don't see it that way because the Vision Pro is designed for collaboration and virtual presence.

For example, from your living room, you could join fans of a cult classic movie for a midnight screening that would never occur in a real theater anymore.

However, the key point is that it poses no threat to TVs or projectors. It's just a different thing.

The Bigger Picture

In recent issues, I've discussed the emergence of 100-inch class TVs as a competitive category, which continues to heat up. However, we're now seeing a new breed of projector emerging: super-bright laser DLP 4K projectors with fixed focal length lenses that offer high image quality.

These projectors don't offer the contrast of a D-ILA JVC or LCoS Sony model, but they're as bright or even brighter than dedicated home theater projectors that cost several times more. They complement the UST segment nicely. The key is the simple, fixed focal length lens, which means you have to adapt the screen size and projection distance instead of using zoom and shift. Yet, by making these compromises, you get a much smaller and more affordable projector that still has a sharp lens.

I mention this because we haven't featured many projector reviews lately. However, projection technology is evolving, and we'll be taking a look at some of these new options in upcoming issues.

This issue largely focuses on speakers and sound, particularly on Sonos. The Sonos Era 300 is one of the most significant audio products of the year. It functions as a competent standalone lifestyle speaker and as part of a good stereo pair for more critical music listening. It can also join a Sonos soundbar and sub to deliver a 7.1.4 Dolby Atmos listening experience, and Rob Sabin's reviews cover both applications.

The Sonos ERA 100 is also new, and Leslie Shapiro gives it a spin. Looking for something beyond Sonos? Jim Wilson tackles the new MartinLogan Motion series speakers, David Vaughn reviews a pair of RSL In-Wall speakers, and I explore a 9.4.4 Arendal 1961 system.

Of course, if you invest in real speakers, you need a substantial AVR to power them! Daniel Kumin's hands-on review of the Denon AVR-X3800H evaluates this strong price versus performance option.

There's one display review in this issue, but it's neither a TV nor a projector. Samsung's G95SC QD-OLED monitor is an outrageous, 49-inch, ultra-wide, 240 Hz, quantum-dot OLED display that sets a high bar for image quality in a 32:9 aspect-ratio gaming monitor.

Greetings to The Gawker

We're adding a regular column to the magazine. Michael Antonoff's The Gawker focuses on AV technology and industry developments. In this issue he tackles the retirement of DVD.com

Special Features

Is a home cinema the ultimate reference for movie-watching? Don't miss our interview with cinematographer Rob Hahn, where he shares what inspired him to build one of the world's highest-performance home theaters.

Also in this issue, join Mike Mettler on a unique journey. The Grateful Dead embarked on a quest to enhance their live sound quality and studio recordings. This led to the creation of the 'Wall of Sound,' a monumental sound system comprising hundreds of speakers and amplifiers. This system not only greatly influenced their subsequent tours and performances but also significantly enhanced the quality of their live recordings.

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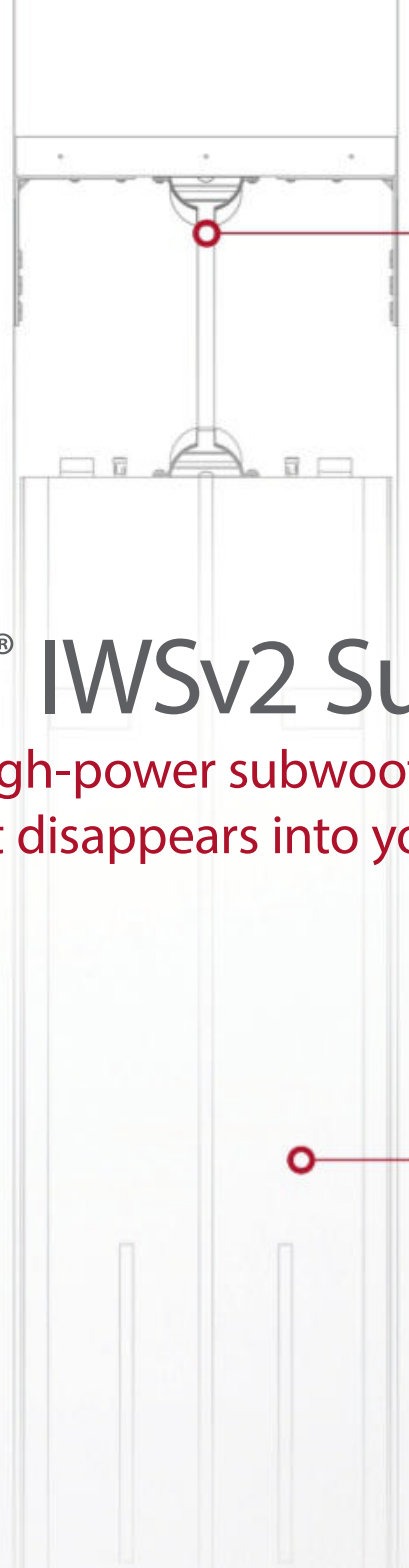

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letters

I have been researching for info on placement of Dolby Atmos speakers in a living room set-up which I suspect is fairly typical. The listening location is more often at the back wall or close to the back. The vast majority of diagrams I have seen puts the listening location more to the center.

I was wanting to know what the latest thinking is for the best placement of Atmos speakers for this scenario? Also while we are on it, what would be the best recommendation for surround back speaker locations?

Jack Barker

First, allow me to commend your dedication to optimizing your living room's home theater setup. The quest for immersive audio-visual experiences is one that Sound & Vision *magazine truly values. The placement of your Dolby Atmos speakers indeed has a significant impact on the sound dynamics within your room. Though most diagrams tend to suggest central positioning for the listening spot, there's always room for customization based on your unique setup.*

When you say Dolby Atmos speakers, that brings to mind the reflected-sound speaker-topper modules. You are correct, the diagrams you see have the seat near the middle of the room. This is largely due to the nature of the reflected sound approach: the sound must bounce off a flat ceiling at a prescribed angle. Especially if you have four Atmos height channels, this necessitates sitting at a midpoint between the front and rear surrounds.

The challenge with seating near the back wall is that it can often compromise the immersive experience and make incorporating rear surrounds tricky.

Direct or Reflected Sound?

Dolby Atmos works best in a setup with height speakers positioned above you. The overhead speakers are the cornerstone of the Atmos experience, so you'll want to prioritize their placement. If your listening location must be close to the back wall, you will want to look into using ceiling-mounted Atmos speakers.

The height speakers should be installed in such a way that they direct sound downwards, allowing the overhead audio effects to be distinctly perceived.

If installing speakers in your ceiling is not an option, and you must opt for Dolby Atmos-enabled speakers that bounce sound off the ceiling to emulate overhead speakers, just know that following Dolby's guidance is critical and even then it won't work optimally in all rooms. While undoubtedly more convenient, the reflected sound modules are more sensitive to placement, seating position, and room size/shape than actual height speakers.

Now, for the surround back speakers. Their optimal positioning can be tricky when you're sitting close to the back wall. Traditionally, you would place these speakers behind the main listening position to deliver effects from the rear. However, in your situation, that might not be feasible. The main thing is you want your surround speakers at ear height or a bit above, you do not want to confuse them for the height channels by mounting them too high.

You could try positioning your surround back speakers to the sides of your listening area, just a little behind your position. If possible, mount them slightly higher than ear level while seated..

Alternatively, if your room layout permits, consider using dipole or bipole surround speakers mounted on the back wall, a bit above your listening position. These speakers disperse sound along a wider path, reducing the risk of having a 'speaker-in-your-ear' effect that can happen with direct radiating speakers in such close proximity.

If the situation calls for it, you may even consider foregoing the rear surrounds and instead investing in a good pair of side surrounds and optimizing the overhead speakers, thus transforming your system into a 5.1.2 or 5.1.4 setup. This is an effective way to still achieve a sense of enveloping sound without needing to position speakers behind your listening area.

Lastly, always remember that the suggested speaker placements, including these, are starting points. Your room's acoustics, furnishings, and personal taste all factor into the equation. The beauty of a living room system is you have some flexibility to move things around and find a combination that works.

However you arrange your speakers and furniture, one of the most important steps is system optimization. Whether by automated room correction or manual adjustment you want to ensure you set distances and channel levels that are appropriate for the layout. Basically, you want side surrounds located on the sides, rear surrounds to the rear, and if possible, heigh speakers on the ceiling. Your specific room and gear will determine the details.

Thank you for your excellent question, and happy listening!

Mark Henninger

R.I.P., DVD.com

PART 2–A NON-OBIT

BY MICHAEL ANTONOFF

The announcement by Netflix that it would stop mailing out DVDs changed my behavior. I now regularly race to a street mailbox before its 9am pickup to return a disc I received the previous day. The sooner the company gets it back, the quicker it will send out the next title in my ever-expanding queue.

I suspect that among red envelope fans, I'm not alone in trying to break our monthly records before the party ends on September 29. I find myself re-renting many of the same discs I've seen before. I know this because DVD.com (Netflix's non-streaming subsidiary) has kept a list of all 2,500 discs I've borrowed since 2005. (I can't believe they've already dumped my history from the preceding 7 years.)

Part of the joy of borrowing the same discs has been the belief that we had permanent access to a giant storage bin of 100,000+ titles that we couldn't possibly fit in our homes. DVD.com combined the best of analog and digital—physical media stored off site. Lately, it's been a regional warehouse in Trenton, N.J. The selections were breathtaking: 20 main genres, 530 subgenres, even a dedicated Criterion Collection section.

My tastes have ranged from romcoms (to sate my wife) to guilty pleasures. How many times have I unsealed *Game of Death* (1978), Bruce Lee's last film, which also starred Chuck Norris and Kareem Abdul Jabbar? Or specific episodes of TV shows like *The Man from U.N.C.L.E.*, *It Takes A Thief* and *Person of Interest*? You know a DVD wasn't pressed yesterday when its opening menu offers the full and widescreen versions.

I regret that I waited and belatedly downloaded the DVD.com app onto my iPhone 5 years after it became available. Holding a queue in the palm of your hand is more intimate than using a browser on a desktop computer, my modus operandi managing Netflix through five versions of Windows.

As movie lovers we can't help but wonder what fate lies ahead for all those discs in Netflix's vault. Will they be bulldozed like so many pirated videocassettes? Turned into recyclable petroleum products? Will another company make an offer to carry on the business? Redbox, the DVD kiosk operator, says it was rebuffed when it tried. Or maybe Netflix could sell discs to those it abandoned. That would bring Netflix full circle to its origins when renters had the option to buy their DVDs.

Lately, Netflix has been cracking down on password sharing, a problem never as acute for the disc side of the business simply because subscribers registered one mailing address, and there was always a ceiling on how many movies they could have at home. (A popular plan ran $16 a month for 3 DVDs out-at-once.) For sure, the number of disc subscribers has been shrinking. As of late last year, the DVD service had an estimated 1.5 million subscribers, according to the Associated Press, a small fraction of the 232.5 million paid streaming subscribers reported by Netflix in the first quarter of this year.

Still, during its quarter-century run, Netflix shipped more than 5.2 billion DVDs and recorded 40 million unique subscribers, according to the company. In bridging the decades between Blockbuster late fees and streaming anytime, the service was profitable enough to help finance Netflix's switch to original content and direct delivery to smart TVs.

So, what killed the envelope empire? Besides the obvious corporate savings of transmitting bits rather than shipping discs, it hasn't helped that postal rates have kept rising. Also, studios that once saw Netflix as a wholesale customer for its home video offerings have since started their own streaming services. Why supply a competitor at all?

After the obituary bounds the years 1998 – 2023 in parentheses, DVD.com will likely be nominated for entry into the Museum of Failure, a traveling exhibit of unsuccessful products that I recently visited in Brooklyn. Will the red mailers be placed under glass between display cases for DivX (a short-lived DVD format) and New Coke? I don't think so. If anything, a celebration for a quarter-century of service is in order. Netflix by mail successfully changed the way we consume home entertainment. I for one will be forever grateful.

The Author

Michael Antonoff was executive editor of *Video*, a founding editor of *S&V* and a tech columnist for *USA Today*. He's covered Netflix since its inception and been a continuous user of its disc-by-mail and streaming services.

wide angle

signals

Music Metadata Smackdown

BY KEN C. POHLMANN

Classical music has a problem. A tiny company, and the world's largest technology company, both think they have the answer. They are strapping on their powdered wigs and stepping onto the podium. May the best baton win.

If you want to listen to Adele's "Rolling in the Deep" it's an easy matter to pull up a menu and you'll immediately see the artist, album, and song title. That's true of most pop music because most pop songs can be categorized in a straightforward manner.

Classical music is much harder to categorize. On a recent flight on Omega Airlines (not the real name so I don't get sued), the menu for their classical music "Mixtape" was virtually undecipherable. The first several listings read something like:

1. Piano Concerto No. 5, Ozawa
2. Mozart, Symphony in G minor
3. Haitink, Concertgebouw
4. Pavarotti, Turandot
5. Yo-Yo Ma, Dvorak

Say what? Because I am not artificially intelligent, from reading this menu, I have no way of knowing what is being offered. It's like some perverse riddle to test your knowledge of classical music. In fact, this is what their gibberish meant:

1. Beethoven, Piano Concerto No. 5 in E-flat major, 'Emperor," Serkin, Ozawa, Boston Symphony
2. Mozart, Symphony No. 40 in G minor, Bernstein, Vienna Philharmonic
3. Bruckner, Symphony No. 8 in C minor, fourth movement, Haitink, Concertgebouw
4. Puccini, Turandot, "Nessun dorma," Pavarotti, Mehta, Los Angeles Philharmonic
5. Dvorak, Cello Concerto, Yo-Yo Ma, Masur, New York Philharmonic

Here's the problem: Classical music can be categorized by composer, composition title, section within the composition, conductor, soloist, performing ensemble, as well as lesser attributes such as nickname, opus number, instrument, year, music period, etc. Every classical music performance is unique and there might be hundreds of recordings of a composition. Unless all the bookkeeping is done properly, it might be impossible to find the recording you're looking for. In short, handling classical music metadata is a nightmare.

Unsurprisingly, hitherto, the big music streaming services haven't shown much interest in the problem. That's because classical music profits are a rounding error to them. But two small streamers, Idagio and Primephonic, enthusiastically stepped up to develop search engines for their catalogs that largely untangle the string. We'll get back to Primephonic in a moment.

Idagio is a classical-music streaming service based in Berlin. Its database is extremely searchable; there are tabs for composer, performer, period, genre, and instrument, but I find it easier to just use the search engine. Typing in "Bruckner Symphony No. 8" brings up a long list of recordings as well as links to filter them by conductor, symphony, and whether the recording is a live performance.

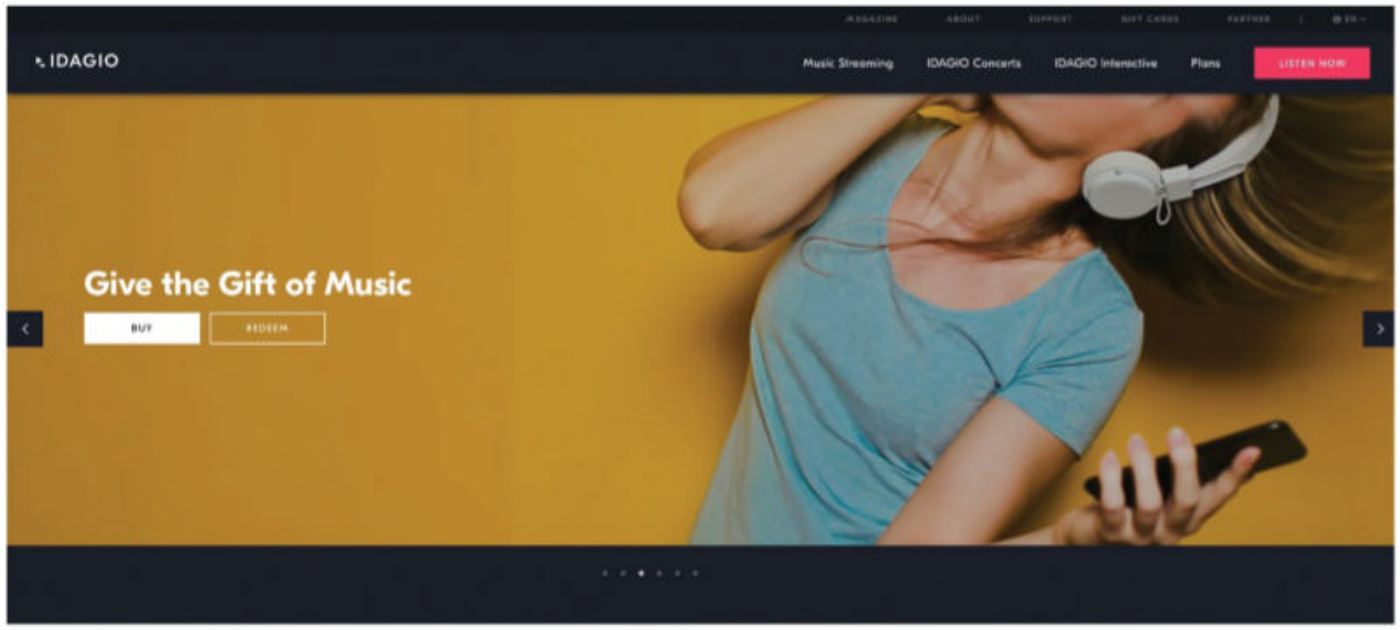
You'll also see which recordings are most popular - a quick way to weed out the kazoo performance you might not be looking for. The depth of Idagio's catalog is impressive; you'll find everything from historic to new recordings, from big-name to obscure. Idagio's basic version is free, and paid versions remove ads, improve sound quality, and add features and even live concerts.

Apple has launched Music Classical, a streaming app that is bundled with an Apple Music subscription. To kick start its project, Apple acquired Primephonic. Thus the star attraction of Apple Music Classical is a way to find the Dvorak you're looking for. As with Idagio, search words bring up a list of recordings and it is easy to drill down to find the one you want. Generally, Apple's GUI is more visually appealing than Idagio's. But the app's not perfect.

Frankly, the system still needs some work. You can still get tangled up in conductors, soloists, and orchestras. The "Editor's Choice" recommendations are interesting, but some of the recommendations are puzzling to say the least. So – not perfect, but it's a great start, and it will improve over time.

I am not an Apple guy. I sold my soul to Windows. Moreover, I am not a phone guy. Since Apple's offering is limited to iOS (as of this writing, Mac and Siri don't have it), I am naturally inclined toward Idagio; its catalog is solid, its search engine works well, and I can access it from my desktop PC. Somehow, although the repertoire is vast, Apple seems more like classical music for beginners, while Idagio might be more interesting for the hardcore enthusiast.

But, there is no denying that Apple is on to something. With a little more work, its catalog will become easily navigable and I'm sure it will migrate to other Apple platforms. There is no denying that anything Apple does is a big deal, and this new service will improve access to classical music and broaden its appeal. In this highbrow smackdown, classical-music buffs are the winners.



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Atmos Only Knows

Producer Giles Martin reveals how he focused on getting a "real" feel when he mixed The Beach Boys' benchmark 1966 album, *Pet Sounds*, in Atmos.

BY MIKE METTLER

After scoring big last year with his stellar Atmos mix of The Beatles' seminal August 1966 album *Revolver*, producer Giles Martin was more recently tasked with giving the Atmos treatment to The Beach Boys' benchmark May 1966 release, *Pet Sounds*, which is now available for streaming via Apple Music, Amazon Music Unlimited, and Tidal.

In a recent Zoom interview, Martin and I discuss what his approach to dealing with all those infamous Beach Boys vocal stacks entailed, how he guaranteed his *Pet Sounds* Atmos mix stayed true to the music's "real" intent, and how he made sure "God Only Knows" comes across as being nothing short of heavenly in its Atmos incarnation. (A longer version of this interview appears in my monthly Spatial Audio File column on the *S&V* site.)

Mike Mettler: Tell me how you approached working with the *Pet Sounds* vocal stacks in Atmos.

Giles Martin: The vocals, obviously, are *so* important because it's *The Beach Boys*. In a way, that's the easiest thing because they *are* The Beach Boys, and they're so good. It's much easier to mix things that already sound that good.

And this is such an unsexy word, but it's the *precision*. I think we get excited by humans doing *inhuman* things, and The Beach Boys did things that no one else has really been able to do since, in that way. There are so many different facets to it because it's *conversations* between humans. That's what backing vocals are, in a way. It takes more than one voice to do a backing vocal—otherwise, it's the same person, over and over again. I think that was the secret about The Beach Boys, in that they made *such* a good sound together.

And, I suppose, in doing an immersive mix for *Pet Sounds,* I had to be *very* respectful of the way those voices blend together—and not really change that. That was a part of the challenge—making sure I didn't change the way those textures worked together—but at

the same time, we had to get a feel of what it's like to be in the room with the band singing. That's what always excites me. You can use this format, Atmos, to get close to the artists you love. In a way, that's how people responded to The Beatles when I started doing immersive versions of The Beatles.

Mettler: Did the height channels give you extra freedom to get us more of that sense of, "Wow, I can really *visualize* what I'm hearing"? Does that sound about right?

Martin: Yeah, but you have to be careful of the height channels, because we don't listen to that much "height" in reality, right? (chuckles) We do if it's a helicopter flying overhead. But I think what height gives us in this realm—well, the recording of the *band* is so important in *Pet Sounds* because they're playing live, and they're extraordinary. They're extraordinary players, so what I would tend to do is put them in a horseshoe around you in the room so it's like being in the studio there with them. Therefore, the height channels are giving you some reflections in the ceiling as opposed to anything discrete, because it's hard for us to hear anything at the top of our heads.

Mettler: Fair point. Let's now zero in on "God Only Knows," something that had to be mixed *exactly* right, especially when it comes to Carl [Wilson]'s lead vocal. Were you conscious of making sure that song *really* had to be something special in Atmos?

Martin: Yeah. This one was really hard because it is one of the greatest songs ever written. When the vocals start relaying to each other—when the harmonies flood in—it can be truly beautiful, and then it can be more glorious because you have more channels to play with. What's happening in those parts of the song is, I'm playing around with space there. I'm playing around with the fact that there is more than one person singing.

There's no point in denying it. And certainly, at the end with the answer vocals, what I'm doing there is trying to create a sense of, "these are people in a room, singing to each other." It's a very different thing. More than anything else, the thought process of mixing *Pet Sounds* in Atmos is not a technical one, but it is more of, "How does it make you feel?"

If we take "Sloop John B," for example—that is *not* a personal song. That is a song *en masse*. But with something like "God Only Knows," it is a *deeply* personal song—an incredibly personal song. Therefore, my wish is to have Carl up and centered, and intimate. And then the backing vocals can be supporting him, because that's what "God Only Knows" is. In the other Atmos tracks, maybe I'm going for more with the vocals, but with "God Only Knows," you can hear the breaths from around the room.

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wide angle

The Connected Life

Summer Entertaining

AUDIO

BY JOHN SCIACCA

When you think of "entertaining" with your AV system, chances are the first thing that comes to mind is your home theater or media room. And while having friends over for dinner and a movie is a great use of your system, it's really just the tip of the iceberg.

While distributed audio and video systems, along with killer automation can make for a fun and entertaining home, it's important to remember the spaces outside your walls, and that when it comes to summer entertaining, the outdoors often sees the most action.

Nowhere is outdoor entertaining more prevalent than the backyard. This is where barbecues happen, where lounging by the pool happens, where hanging out with some cold ones around the grille happens. If there's gonna be a summertime party, chances are it's going down in the backyard, and that means you'll need some A/V gear that's up to the task.

But beyond just the vague "backyard," now we have gazebos, outdoor kitchens, fire pits, outdoor dining areas, and other elaborate spaces that make entertaining in the great outdoors even greater.

And while there are a ton of great options available for making these spaces more fun, adding A/V to the outdoors is a different animal. First, you are dealing with elements like sun, water, humidity, wind which can affect system performance and longevity. You also have much larger and open spaces that don't do so well at containing the sound and concerns like bothering neighbors are far more real.

With that in mind, here are some things you need to consider to make sure your outdoor audio system not only performs up to expectations, but that it will last more than a single season!

AUDIO

While there are tons of different system configuration possibilities, there are basically three tiers to outdoor audio: Portable/temporary speaker, rock/surface mount speakers, and a landscape audio system.

At a minimum, your outdoor audio should include a portable speaker like a Sonos Move or a JBL Flip 6. These splash-resistant, battery-powered speakers can easily be carried around to provide decent tunes for a small area. Also, since you'll be Bluetooth-ing to it from your phone, there aren't any wiring concerns, making it a fast and easy solution. But the sound really isn't that impressive or useful for group listening, and we *Sound and Vision* readers should definitely aim a little higher.

With outdoor audio, one simple rule of thumb is, "More is better." More speakers, more wattage, more coverage.

The tricky thing with outdoor audio systems can be the wiring, as nearly any system requires speaker wiring pulled from each speaker back to electronics that should be kept in a weatherproof and climate-controlled area. (#Protip: Pull any landscape audio wiring in conduit if possible, as it will save you from weed-eater accidents, and use wiring with a direct burial rated jacket.)

A "simple" outdoor audio system consists of a source, say something capable of streaming like a Sonos Port, and an amplifier. By adding a speaker selector, you can easily (and safely) connect up to six pairs of speakers to one two-channel amp allowing you to easily expand the system. For better sound, you could step up to a multi-channel amplifier that would deliver more power to each speaker.

With the above and some porch mounted all-weather speakers coupled with some rock speakers around the pool or yard, you'll enjoy decent audio, volume, and sound quality throughout the listening area. This is also a permanent solution designed to live outside year-round. And unlike portable speakers, there are no worries about misplacing them or charging their batteries. (Another #Protip – With speakers often spaced wide apart, mono is often better than stereo for outdoor areas. Try sending every speaker the same mono signal and it often results in better overall sound.)

Despite the merits of these systems, they still have limitations, such as lackluster bass performance and uneven sound coverage that can be too loud in some spots and too quiet in others.

For the premium in outdoor audio, you'll want to step up to a landscape audio system. Available from a variety of manufacturers like James Loudspeaker, Sonance, Klipsch, Origin Acoustics, and Ambisonic Systems, these systems offer the most impressive outdoor audio solution available. By combining multiple speakers (usually a minimum of eight) that resemble landscape lighting and often placed discretely amongst landscaping, along with in- or above-ground subwoofers, these systems provide even sound coverage throughout a large area, while also delivering actual bass.

A well-designed landscape audio system can remind you of an outdoor amphitheater experience in your backyard, with full-range sound that seems to come from everywhere. Also, due to the nature of these systems, they are very scalable, letting you add speakers and subwoofers as needed to cover even the largest areas. And since all the audio is focused back towards the listening areas – and not firing out towards your neighbors – you are also far less likely to bother anyone should the party get a little too festive.

In my next column, I'll explore various ideas for outdoor video systems and discuss factors to consider when combining audio and video for an immersive outdoor theater experience!

The Author

For the past 20 years, John Sciacca has worked as a custom installer in South Carolina. In his free time, he enjoys playing pickleball and watching movies on his 7.2.6 surround system.

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wide angle quick take

BY LESLIE SHAPIRO

Sonos Era 100

A Versatile Compact Speaker

Move over Sonos One—there's a new kid on the block and its time has come. The Era 100 is one of two new products from Sonos, the other being the larger, pricier Era 300. The Era 100 boasts an array of features that address many complaints from earlier products.

Most notably, the Era 100 offers "stereo" playback, Bluetooth 5.0, an optional line-in USB-C jack for a turntable or CD player with the Sonos adapter,a 25% larger midwoofer than the One, and finally, Trueplay playback calibration for Android users. Why the quotes around stereo? Unlike a system with truly discreet left and right speakers for each channel, the Era 100 uses a single mid-range woofer and relies on two angled tweeters and wave guides to supply the stereo imaging by dispersing the treble frequencies, each powered by its own Class D amplifier.

While far from ideal, this does give the Era 100 a much wider soundstage than any single mono speaker could ever hope for. It is possible to pair two Era 100 for true, discreet stereo playback, and grouping speakers is simple in the Sonos app. A wall mount or speaker stand is available for the Era 100.

The slightly squared off cylindrical speaker is available in black or white. The power cable connects neatly on the bottom, there isn't a battery, but the speaker is small and light enough to carry around, as long as AC power is nearby. I auditioned the Era 100 in high-desert country, but it is resistant to humidity.

The top of the speaker has a touch slider volume control that is really a treat to use. Slide to continuously adjust, or tap to quickly jump to a new volume. There are play/pause and track advance controls as well, so you aren't 100% reliant on an app, be it Sonos or something like Spotify.

The Era 100 has what I feel is a very important feature. The voice-assist commands are compatible with Sonos Voice Control and Alexa, while notably missing legal foe, Google Assistant. Through the app, users can access Spotify, Tidal, Qobuz, and utilize built-

AT A GLANCE

(+) Surprising upper bass accuracy

Bluetooth or WiFi

Privacy controls

(–) Minimal stereo imaging

Compressed sound

Price: $249

RATING

PERFORMANCE ★★★★½

FEATURES ★★★★★

ERGONOMICS ★★★★★

VALUE ★★★★½

THE VERDICT

Who says you can't improve on perfection? The Sonos Era 100 is the new replacement for the much-heralded Sonos One speaker. Does it offer improvements? Absolutely! With Bluetooth and Wifi connections, Voice Assist and extremely loud playback, the Era 100 is up to the usual Sonos hype, with sound that delivers.

www.sonos.com

in Apple AirPlay 2. There is a touch-control button on the top that defeats or activates the voice-assist microphone (while still having it active for Trueplay tuning), but for added security, there's a switch on the back of the 100 that completely disconnects power from the microphone. There is also a button to switch from WiFi to Bluetooth.

Setting it up in the app is exactly the same as any other Sonos product, intuitive and easy. Plug in the speaker, open the app, bring your phone close to the unit and look for the "+ Add Product" under your system settings. The app walks you through the rest of the setup.

There is an option to add a Sonos sub or set up a stereo pair. Basic treble and bass EQ settings are available, as well as a loudness control that enhances the bass at lower listening levels. And I am truly pleased to share that the Era 100 has Trueplay support for Android that uses the 100's microphones to tune the playback response to your listening room. It runs a series of tones to adjust the playback response, and as long as the microphone is active, will continue to adjust as it is used. iOS users have advanced Trueplay that, in addition to the speaker's microphone, uses the microphone in the iPhone to further calibrate playback.

I've had the pleasure and privilege to audition quite a few Sonos speakers. With that experience, I've come to expect a certain level of fidelity. The Era 100 does not disappoint. I am enthralled with Hozier's latest, "Francesca", based on Dante's "Inferno." His voice is achingly rich but its upper clarity gets lost in the distorted guitars that over-power the mix and he sounds a bit strained on higher notes. During the massively powerful outro, the mix starts out muddy and details get lost, but as it gets sparser at the very end, the nuances hauntingly shine.

The bass is surprisingly solid, albeit constrained. It lacks deep bass extension, but the accuracy and control of the bass that is present is never overbearing. Once I added in the Sonos Sub Mini, the bass response was fantastic, with little gap where their responses crossed over. I found the high treble to feel a bit stressed, but I was blown away by the low-end sonics.

The Era 100 certainly can play loud - I could never get anywhere close to its maximum level on this track. But it sounds compressed if driven too hard, with a definite harshness in the upper high end. And even with the wave guides and stereo tweeters, the sound is localized to the speaker, with the imaging barely extending beyond the chassis. I would absolutely recommend pairing two Era 100 speakers for an accurate stereo image.

I have to say that I'm a fan of the Sonos ecosystem. I find the Sonos app easy to navigate, and it makes playing music across a variety of platforms intuitive and concise, along with the ease of Sonos' multi room options. The Era 100 fits right into my world as a good little speaker that behaves itself as long as you don't try to push it too hard. For a bigger room, I would absolutely recommend pairing two Era 100 speakers or springing for the Era 300. All in all, for the price, the Era 100 is a solid speaker whose time has come.

Subwoofer Setup

BY JOHN SCIACCA

Q Dear *S&V* team,
I hope you are well. First of all, thank you for the quality of your reviews and articles, I live in France and I read your website at least twice a week.

I am writing to you as I have a follow up question to a previous question of one of your readers "What's the best way to connect a subwoofer to a stereo receiver?"

By reading several forums and articles about subs, I understood that a subwoofer is a clear benefit in a stereo system. However it needs to be set up properly otherwise the listening experience could be badly impacted. So my question is: once the sub is correctly connected to the integrated amp, how do you make sure that it is set up to be fully integrated in the stereo system?

What would be the steps to follow in order to make sure that the sub will give the illusion that it is an extension of my speakers instead of an additional part of the system that sits next to my speakers to provide a boomy sound (which I would like to avoid)? I own a Cambridge Audio CXA 61 and B&W 606 S2. I am thinking of getting a B&W ASW 610 sub.

Best regards. **BENOIT BLOND**

A Ben, this is a great question! A subwoofer can definitely enhance your bookshelf speakers by adding significant impact and low-end extension, and there are a couple of general suggestions for single subwoofer setup that will help it blend in with your system. While a sub's audio is mostly "non-directional," I find it blends best placed at the front of the room, and starting in a corner will help to best energize all the room modes. However, you might need to experiment with the location for best results in your room. (Google "subwoofer crawl".)

Your model of receiver doesn't appear to offer any bass management settings so the bookshelf speakers will be fed full-range signals whether the sub is connected or not, which will produce some overlap between them and the sub. Also, the receiver's sub output is interesting in that it has a low pass filter "of approximately 2.3 kHz" instead of the far more common 80 Hz. Because of this, you're going to want to set the low-pass filter on your subwoofer at 80 to start.

I would also suggest purchasing a calibrated microphone like the UMIK-1 (minidsp.com) and downloading the free Room EQ Wizard (REW) software. (There is a massive amount of online support for using this terrific software!) With this you can run some sweep tones to measure and see exactly what is happening at your listening position. This can more quickly help you fine tune volume levels, phase, crossovers, and location to find what works for the best sub integration in your room.

While some subwoofers by SVS and Rythmik have built-in parametric equalizers (PEQs) that can help you address problem frequencies in your room, you could also purchase something like the miniDSP 2x4 HD which will provide an array of adjustments to get the best performance out of your B&W speaker system!

Q Essentially this is a two-for-one, as both Ed Mendelson and Sam V had very similar questions about connecting an external amplifier to a Marantz AVR.. Ed wants to add a 3-channel amp to his Marantz SR7012 to power his L/C/R's. On the other hand, Sam wants to use his Marantz SR5013 for the audio processing but use a Yamaha RX-A3020 for the amplification. How do we do this?

Ed: Simply connect some quality, equal length RCA cables from the Front Left, Right, and Center Pre-Outs of your Marantz to the inputs of your new amplifier, and then connect the speakers to the wiring terminals of the new amplifier. No configuration is required for this setup. The Marantz will use the same bass management and room correction settings on those pre-outs as it does when connecting to its speaker terminals. I would definitely re-run Audyssey (or recalibrate the volume levels) after doing this as the new amplifier will likely have different performance characteristics.

A Sam: Your setup is a bit trickier since we are using two receivers that both have volume controls and processing on board. Though it is significantly older, I think the Yamaha would have a better power amplification section than your Marantz, so this isn't a bad idea. You'll use equal length RCA cables to connect the Marantz's Pre-Out connections to the Yamaha's Multi Channel Inputs, and then you will connect all of your speaker wiring to the Yamaha.

I'm thinking you should also connect the subwoofer to the Yamaha to minimize any volume level mis-matching. You will want to go into the Yamaha's settings menu and set all of the speakers to LARGE and subwoofer to On, because we don't want it trying to do any bass management, which will all be handled by the Marantz. You will also want to leave the Yamaha on the Multi Channel Input, and I'm thinking you should leave its volume setting to 0.

Then, set up the Marantz as if you were directly connecting the speakers to it. This can be done by either manually inputting the speaker information or running Audyssey. All of the volume adjustment, processing, bass management, and room correction should then pass through to the Yamaha which will amplify the signals and send them on to your speakers. I'd love to hear a follow-up on how this setup worked out and if you noticed any improvement in the sound quality!

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RSL W25E IN-WALL SPEAKERS

Invisible Treasure

By David Vaughn

I RECENTLY upgraded from traditional box speakers to in-wall speakers after delving into the world of in-walls with my recent review of the SVS 3000 In-Wall Subwoofer, which I installed in my den. My wife never liked the aesthetics of the entertainment system because the first thing you saw walking through the door was a wall-mounted bookshelf speaker, which stuck out a good 8 inches from the wall. Despite the great sound, it wasn't so easy on the eyes.

After receiving approval from the CFO, I had to decide which in-wall speakers to purchase. The decision was pretty simple: I chose RSL (Rogersound Labs) because the company offers a tremendous value proposition and is built on a compelling story.

AN AMERICAN TALE

RSL started making speakers back in 1970 and became an instant success. Founder Howard Rodgers had a vision of building speakers with high-quality parts and selling them direct to the consumer at affordable prices; selling direct enabled the company to keep prices low by cutting out the middleman and eliminating profits collected by the distributor and dealer. The strategy worked. Rodgers opened his first factory-direct store in North Hollywood, CA in 1970, and as luck would have it, one of his early customers was a producer from Warner Brothers Records who was so impressed by what he heard that he ended up buying a pair of speakers and spreading the word among his colleagues in the music business.

Before long, RSL speakers were being placed in recording studios throughout Southern California.

In the years that followed, Rodgers developed speakers and eventually invented and patented Compression Guide technology, an enclosure design that reduces the cabinet resonance common to all box speakers by guiding rear

RATINGS

RSL W25E In-Wall Speakers

PERFORMANCE ★★★★½

BUILD QUALITY ★★★★½

VALUE ★★★★★

RSL CG25 Center Channel

PERFORMANCE ★★★★½

BUILD QUALITY ★★★★½

VALUE ★★★★★

RSL Speedwoofer 12s

PERFORMANCE ★★★★★

FEATURES ★★★★½

BUILD QUALITY ★★★★½

VALUE ★★★★★

sound waves through calculated expansion and compression areas, thereby improving sound quality.

In 1989, Rodgers decided to retire after accomplishing everything he set out to do with his company. Unfortunately, the new owners made a lot of unwarranted changes to the business model and went out of business within three years.

Howard purchased back the company name but didn't do anything with it for more than a decade and a half. It was during this time that he contemplated some new approaches to his Compression Guide technology and began experimenting with new designs while building his own home theater. He had no intention of mass-producing the speakers, but when his friends heard them firsthand, they wanted to buy them

Seeing an opportunity to carry forward his father's legacy, Howard's oldest son, Joe Rodgers, convinced him it was time to relaunch the speaker brand. Their goal was to continue the tradition of offering quality speakers at wallet-friendly prices.

My introduction to the RSL brand came seven years ago when I reviewed the Speedwoofer 10s. Not only did this product offer stellar performance, but it also provided phenomenal value with a budget-friendly $399 price tag that earned it a Top Pick award.

I contacted RSL to determine which speakers to use for the in-wall installation I was planning and received a prompt response from Joe, who oversees the day-to-day operations. He recommended a 5.1-channel system that paired five of RSL's new W25E in-wall speakers with their new Speedwoofer 12s subwoofer. I agreed with his suggestion and the speakers arrived within two days, well-packaged to withstand the rigors of ground shipping.

HOUSTON, WE HAVE A PROBLEM

Installing a 5.1 sound system using in-wall speakers is quite a bit more challenging than setting up a surround system with traditional box speakers because you have to first decide where to put each speaker and then cut holes in the wall to accommodate all of the speakers. In other words, it pays to be handy because once you make the cut, there's no turning back.

Using a stud finder, I had to determine where the speakers would fit in relation to my current TV (as well as accommodate a larger display at some point in the future). It was at this point that I realized I had a problem: There was a rogue stud (not 16 inches on center) right where the center-channel speaker needed to go.

Instead of opening up the wall and removing the stud, I opted to purchase a standalone RSL CG25 center-channel speaker and forgo the extra construction. Fortunately, I was able to maintain the clean aesthetics my wife was looking for by placing the speaker on a recessed shelf above the TV and angling it down toward the main listening position.

Then it was time to figure out where to locate the remaining four speakers, cut holes in the walls, and run fire-resistant CL2-certified 12-gauge speaker wire to each location. The installation instructions accompanying the W25E speakers are clearly written and easy to follow. Thanks to the cardboard template, cutting the holes with a drywall saw was quick and painless (but very messy). RSL recommends installing insulation behind the speakers, so I picked up some Rockwool from a nearby

At a Glance

- \+ Clean Output
- \+ Edgeless Magnetic Grill
- \+ Angled Baffle Design improves imaging
- − Requires insulation behind the speaker

Price: $2020 (as tested)

RSL W25E left/right speaker, $199

RSL CG25 center speaker, $425

RSL W25E surround speaker, $199

Speedwoofer 12s subwoofer, $799

800.905.5485

rslspeakers.com

RSL W25E IN-WALL SPEAKERS

home improvement store. Sound emanates from both the front and back of the speaker, so if you skip this step, you'll get cancellation at certain frequencies, leading to uneven frequency response.

If you mix and match the W25E speakers with RSL's other speakers, you should get a similar frequency response thanks to its MTM (midrange-tweeter-midrange) driver arrangement. According to the company, the W25E is not a conventional MTM. The tweeter is offset, and the woofers are positioned in closer proximity than is typical. This layout is designed to deliver better vertical and horizontal dispersion for a smoother response at the listening position versus a conventional MTM inwall design.

The woofer used in the W25E is 5.25 inches in diameter and features a woven, mineral-filled poly-cone with a butyl rubber surround, strong cold-rolled steel frame, and high-energy ferrite magnet. The tweeter is a treated-fabric exposed dome with a neodymium magnet. The speaker also features a high-quality crossover with custom capacitors and inductors to ensure seamless integration between the tweeter and woofer.

In addition to delivering better imaging in a L/R setup, the W25E's baffle is angled 15 degrees, which allows the speaker to be oriented upward or downward when placed above or below a TV. Since my surround speakers were placed near a back wall, I used the 15-degree angle to create a diffuse sound field by aiming the speakers' output toward the back wall, which worked out quite well.

The speaker has a two-position tweeter-output switch that can be set to 0 dB or -2 dB. As a rule of thumb, RSL recommends using the 0 dB setting unless the space is very live acoustically—i.e. has lots of reflective hard surfaces—and has low ceilings. Once the W25E is ensconced in the wall, you can conceal it with an "edgeless" grille that attaches magnetically to the speaker's frame for a clean, integrated look.

The CG25 is a beautifully crafted center speaker. A flawless high-gloss piano black finish looks like it belongs on a speaker costing much more than $425. Like its in-wall cousin, it also sports the MTM driver layout with ports flanking each of the 5.25-inch woofers. As a finishing touch, it includes an industrial-looking magnetic grill that blends well with the speaker.

Rounding out the speaker system is RSL's new Speedwoofer 12s, which boasts a 12-inch custom-designed woofer powered by a 500-watt amplifier (1,550 watts peak) and sports RSL's patented Compression Guide tuning; it also includes a handy remote with controls for power on/off, volume, and four EQ settings (Reference, Movie, Music, and Boundary).

Reviewer and subwoofer expert Jim Wilson is taking a deeper dive into the 12s individual performance characteristics in a separate review, but I have some quick thoughts. Though the Speedwoofer 12s is quite imposing in a small space—my den in this case—I was able to nestle it into the front right corner of the room while adhering to RSL's recommendation of keeping the sub 4-5 inches away from the wall due to its rear port.

The RSL speakers joined a system in my den that consists of a 15-year-old 50-inch Vizio plasma TV, a Denon AVR-2313CI AV receiver, an Oppo BDP-103 Blu-ray player, and a TiVo Bolt streamer/DVR.

I'm pleased to report that Mrs. Reviewer was extremely happy with how the installation turned out. She's made several comments about how much cleaner the room looks and has even hinted about putting a bigger TV in the room—I see a 77-inch OLED in my future! I use this room mainly to watch sporting events such as NFL football and PGA Tour events on a lazy Sunday afternoon when I don't feel like firing up the projector.

Specs

W25E IN-WALL SPEAKER

WOOFER: Dual 5 1/4" Woven textured Mineral-Filled Poly-Cone Woofers
TWEETER: 22mm (7/8")
WEIGHT: 7.6 lbs.
DIMENSIONS: (Overall): Depth 4", Width 9 7/8", Height 14".
DIMENSIONS: (Mounting): Depth 3 3/4", Width 8 7/8", Height 13"

CG25 CENTER SPEAKER

WOOFERS: 5.25" cast frame, aramid-fiber cone with Ferrite Magnet
TWEETER: 1" translucent silk dome, neodymium rare earth magnet
WEIGHT: 23 lbs.
DIMENSIONS: H: 19" W: 8 1/2" D: 9 3/4" (without grille 9")

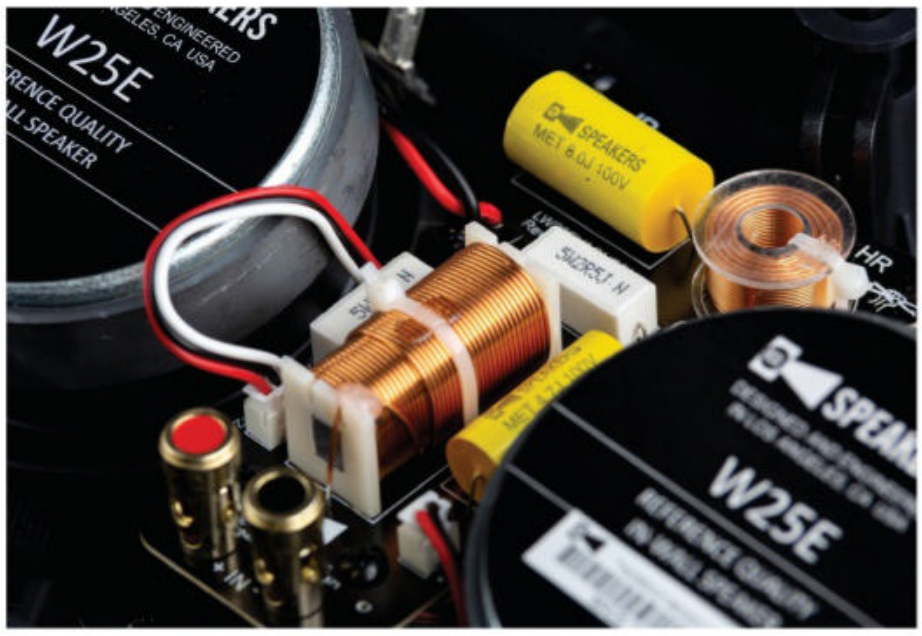
SPEEDWOOFER 12S SUBWOOFER

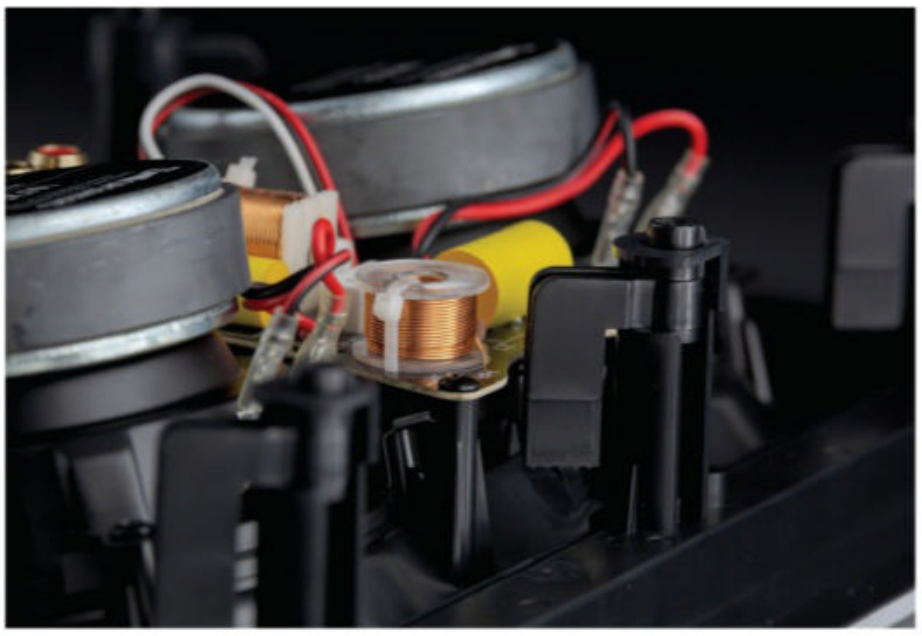
WOOFER: 12" Woofer
AMPLIFIER: 500 Watt RMS <1% THD (1550 Watts Peak)
TYPE: Rear-vented Compression Guide tuning with slot port
Inputs/Outputs: Line Level RCA inputs/outputs, Speaker Level Inputs
WEIGHT: 82 lbs.
DIMENSIONS: 18 7/8" x 22 1/4" x 22 1/8" (WxHxD)

LISTENING

Since I had already installed the SVS 3000 subwoofer in the wall of my den, I started out listening with the 3000 in the mix but switched over to the Speedwoofer 12s and have since spent several weeks listening to the all-RSL system. While RSL's Speedwoofer 12s takes up space in the room, its larger woofer and much larger enclosure allow it to dig a bit deeper below 20 Hz than the SVS 3000 is capable of.

To compare the two, I





performed another six-point Audyssey calibration and the results were nearly identical, other than the sub's roll-off point dropping from 22 Hz to an infrasonic 18 Hz. Audyssey set the crossovers at 110 Hz for the four in-wall speakers and 90 Hz for the center speaker, which provided the flattest frequency response in the crossover region—something I verified with REW (Room EQ Wizard) measurements.

After giving the system a few weeks to break in, I began critical listening with high-quality FLAC audio tracks streamed via my home network to the Denon AVR.

I started with a song I know very well, the title track from Styx's 1978 album *Pieces of Eight*. Though the song didn't fully test the system's dynamic range, it served as a great test for its ability to handle higher band frequencies through scale guitar rhythms, a plethora of synthesizers, and, of course, Dennis DeYoung's piercing vocals.

I've listened to this track for most of my life and, at times, have found it to be fatiguing on inferior systems, but with these speakers it was easy listening.

I worried about losing seamless panning by not using identical front speakers—a characteristic I enjoy with the M&K S150 speakers in my reference theater setup. To test this, I played the 13-minute opening of *Gravity*. In this scene, astronaut Matt Kowalski (George Clooney) skillfully navigates the soundstage, keeping things light for novice space traveler Ryan Stone (Sandra Bullock), who is focused on repairing the Hubble telescope. All the while, mission control (Ed Harris) keeps them on task.

As the camera moves throughout the scene, voices effortlessly transition from one speaker to another; I was particularly impressed with the seamless consistency across the front speakers. The RSL speaker system excelled at creating a solid wall of sound that emanated from the front of the room. And when the Russian satellite exploded, the Speedwoofer 12s kicked into high gear, perfectly complementing Steven Price's Academy Award-winning score and intensifying the onscreen chaos.

Next up, I watched *Alita: Battle Angel*, an underrated film that boasts remarkable sound effects that produce a heightened sense of realism while enhancing on screen visuals. The barroom fight between Alita (Rosa Salazar) and Zapan (Ed Skrein) exemplifies this. Aggressive sound design accentuates the impact of every blow and collision, providing a visceral and thrilling experience for the audience.

While the budget-friendly RSL speaker system did not fully replicate the experience of my reference system, it came remarkably close at a literal fraction of the price. The system excels at imaging, ensuring precise placement of sounds, while punches resonate with authority due to the deep bass extension provided by the Speedwoofer 12s. The result is a moving and captivating audio experience that brings you closer to the intensity of the onscreen action without emptying your savings account along the way.

CONCLUSION

I wasn't sure how much I'd enjoy the change to in-wall speakers, but I have to give my wife credit for pushing me in this direction. The RSL W25E in-walls offer an outstanding value proposition and blend well sonically with the CG25 center speaker and Speedwoofer 12s subwoofer. Installing in-wall speakers requires careful planning and cutting, but the resulting look in the room is a big improvement over speakers hanging on the wall or sitting on the floor.

Having lived with the RSL speakers for a couple months, I'm very pleased with the sound quality and recommend them for budget-conscious buyers seeking audiophile-quality sound. Even if you can afford to spend more, I'd still give RSL speakers an audition because in my experience, they measure up to speakers that cost thousands of dollars more. Highly recommended.

The Verdict

Outstanding sound quality at an affordable price that should please even the most demanding audiophile listener.

MARTINLOGAN MOTION SPEAKERS AND BALANCEDFORCE SUBWOOFER

Perpetual Motion

By Jim Wilson

MARTINLOGAN, you know the name. They've been around since 1983 so pretty much everyone has heard of them. Renowned for its statement electrostatic speakers, the company also offers a full line of traditional cabinet speakers, subwoofers, wireless systems, architectural speakers, soundbars, even discrete outdoor systems. For this review I'll be focusing on the Motion speakers and BalancedForce subwoofer in the following configuration:

Motion F20
Motion C10
Motion B10
BalancedForce 210

Befitting MartinLogan's upscale reputation the packaging was well thought out and executed. The Motion speakers were protected by 2-inch foam, plastic bags covered the cabinets which in turn were cover The BalancedForce subwoofer was double boxed with the same foam, as well as the cloth and plastic bags the speakers used. The sub comes with a printed owners manual; for the speakers you'll need to download a PDF version from

RATINGS

Motion Speakers

PERFORMANCE ★★★★★½
FEATURES ★★★★½
BUILD QUALITY ★★★★★½
VALUE ★★★★½

BalancedForce 210 Subwoofer

PERFORMANCE ★★★★½
FEATURES ★★★★½
BUILD QUALITY ★★★★½
VALUE ★★★★½

MartinLogan's website.

MartinLogan provides a three-year warranty on subwoofers and a five-year warranty on its speakers. No registration is required but the purchase must be through an authorized dealer.

IMPRESSIONS

As soon as you start unboxing this system you can't help but be impressed, evidently MartinLogan has spent some time making sure everything is right. And why not, when you spend over $9,000 you should feel confident it is money well spent. Supply chain issues meant the F20 and C10 I received were finished in matte white, the B10 wore gloss black. The BalancedForce 210 was also gloss black. This actually had a benefit, it allowed me to see what 2 of the 3 finish options looked like (the other is walnut). The subwoofer comes in Gloss Black or Black Ash and the top can be custom ordered with the buyer's choice of paint color.

All of the Motion speakers present a slim face to the listener, the top panel of the cabinet gently angles downward as it slopes toward the back of the enclosure. None of the speakers are tall either, but they do have some depth to them. Nothing extreme mind you, but if you have tight tolerances be sure to measure first. The front of the cabinets have a 45° chamfer to mitigate some of the boxy look speakers tend to have. The 5-way bi-amp/bi-wire binding posts are very stout pieces, with huge acrylic knobs that my XL paws had no problem using. Depending upon the enclosure finish chosen the color of the driver cones and grills will differ; gunmetal gray for white cabinets, black for walnut and black cabinets.

Even the BalancedForce subwoofer gets in on the act of showing a slender image as you look at it since it is shaped like an isosceles trapezoid. I like the fact it's not just a rectangular box shape as is the case with so many other subwoofers. Across the top panel there's a recessed cutout that houses the controls, discreetly hidden behind a smoked glass cover. Push down on the front of it and the back pops up, at which point you pull it off to reveal the buttons, switches and dials. All of them are well-marked and legible, making adjustments simple. There's an illuminated MartinLogan logo as well that can have the intensity adjusted from high to low or even off.

The F20 comes with stylish blackened chrome outriggers and matching feet. However, do not consider them optional because the towers use a port that exits from the bottom panel of the cabinet, so if you choose not to use them, you will lose that output. All the pieces for the outriggers and feet come in a separate accessories box with individual cutouts for everything. Remember when I mentioned about presentation earlier?

MartinLogan sent me a pair of Stand 25 speaker stands for the B10s. The B10s come with screw-in feet with rubber tips so they don't mar the finish of whatever they are sitting on. Guess what else those feet do? They double as anchoring points to secure the speakers to the Stand 25. Simply push the screws through the cutouts in the top plate of the stand and screw them directly into the bottom panel of the B10. It's a pretty neat setup that worked perfectly.

LISTENING/IN USE

I like the sound of MartinLogan speakers, I won't deny it. I've been a fan of its Folded Motion Tweeter (FMT) for a long time—to my ears they have amazing detail and precision. They effortlessly produce highs, regardless of the volume level. They're very smooth, crisp without being sharp or brittle, and aren't the least bit fatiguing, combining the best of both hard and soft dome tweeters without any of their respective drawbacks. Like electrostatics, MartinLogan has an extended history with the FMT. Experience counts here.

BalancedForce 210 has typical controls for a subwoofer; level (gain), variable low pass (30-80Hz), variable phase (0-270°), on/off/auto for signal input. In a comical nod to the movie Spinal Tap, the level goes to 11. It does feature something unique, though: a variable 25Hz adjuster. It's designed to pull

At a Glance

- ➕ Incredible mids and highs
- ➕ Elegant appearance
- ➕ Exceptional build quality
- ➖ Not inexpensive
- ➖ Perfect Bass Kit isn't included with the BalancedForce subwoofer
- ➖ MAP (Manufacturers Advertised Pricing) enforced, discounts may be scarce

Price:

Motion F20 $1,749 (each)

Motion C10 $999 (each)

MotionB10 $599 (each)

BalancedForce 210 $3,499

$9,194 (complete system)

The BalancedForce 210 subwoofer supplemented the Motion speakers in the 5.1 configuration.

down a peak or pull up a null if you have one in that range. It can also be used if you just want a little extra presence in the bottom end. It has a range of -10dB to +10dB. You read that right, +10dB. That is a staggering amount of potential boost at 25Hz. The BalancedForce 210 definitely makes you aware it's there, so much so that in my case I only added 1dB for the 25 Hz adjustment and it sounded good. Level was similarly restrained, 5 was all it took to give me full bass. Be careful how much you boost it though, the 210 starts running out of steam in the low 20Hz range. I imagine if you get too happy with the control and try cranking the volume, those 10-inch drivers might object to being pushed that hard near the bottom of their usable range.

The amp on the BalancedForce can accommodate any type of input you care to use; XLR (balanced), line level (unbalanced) and speaker level. Balanced and line level offer options for left, right and LFE. There's also a 12v trigger, well 5-24v actually. From there things take an interesting turn, MartinLogan offers you the ability to use two different inputs for separate purposes. For example, you could use XLR for home theater and line level for two-channel. And finally, there's a USB input. That for uploading a custom low pass filter or to update the amplifiers firmware.

MartinLogan offers an optional next-level adjustment system called the Perfect Bass Kit (PBK). Based on the highly regarded Anthem ARC Genesis software, the PBK allows you to fine tune your subwoofers performance with much greater accuracy than most room correction systems built into an AVR are able to. I have experience with the PBK, having used it in previous MartinLogan reviews, so I know it can make a noticeable difference in performance and sound quality. For the Dynamo series I understand why it's an option - that is MartinLogan's modest priced subwoofer line - but the BalancedForce is their premium offering so I would have preferred it to be included. The 210 sounded really good after I measured and adjusted it manually, but I suspect the PBK may have been able to make it even better.

MOVIES

Because I have a 5.1 system to test I focused on flicks with busy soundtracks, not necessarily the entire movie but at least notable scenes. Of my choices, one is from prehistoric times, another is during the 1800's and the third is purely fantasy. How's that for a varied mix? One thing they all have in common is voices, lots of them. For me one of the most telling aspects of a speaker is whether or not it can accurately replicate the human voice. Fear not as all of the soundtracks have something to challenge the Balanced-Force subwoofer too.

Fury features Brad Pitt as 'Wardaddy' Collier, the commander of a WWII Sherman tank crew. While operating behind enemy lines their tank throws a tread and comes to a halt. Before the team can affect repairs a battalion of Nazi SS comes marching up on them. They're stuck with 2 choices, abandon the tank and beat feet or stand and fight. They choose the latter.

As the stormtroopers approach there's a moment where the Americans are sitting in the tank, awaiting the inevitable. They're sharing a bottle of whiskey and some gallows humor. Despite this being a challenging environment for voices—small, enclosed compartment made entirely of metal—the Motion speakers did a brilliant job, reproducing each with distinct characteristics. When the SS roll up on the tank the speakers had a much different job, and so did the subwoofer. Now it was time for chaos.

Once the Nazis are within striking distance the Americans unload on them with their canon, the stand mount machine gun, pistols and hand grenades. The BalancedForce 210 came to life, providing a solid kick from the individual weapons. Blending seamlessly into the low end were more delicate sounds like that of bullets ricocheting off the tank and people shouting out commands in the distance. Both the heavy and light elements were equally well represented.

Open Range is like an old-school western, slow-moving and character-based. With a cast that includes the likes of Kevin Costner, Annette Bening, Robert Duvall and Michael Gambon, *Open Range* gives me plenty of opportunity to hear a variety of disparate voices. Boss Spearman (Duvall) and Charley Waite (Costner) are 'free grazers', basically people who herd their cattle to open lands to feed. Denton Baxter (Gambon) is a rancher with a large posse of henchmen determined to control the land and all the people who live in the area. Baxter isn't the least bit fond of free grazers, which

inevitably leads to a showdown between him and our two heroes.

The confrontation starts simply with Boss and Charlie plotting, trying to determine how best to face Baxter and his flunkeys. While they're talking over strategy, Charlie is loading his revolvers. I could hear the slight click of the bullets as they slide into the cylinder, along with the mechanical sound as he spun it to expose the next open chamber. For me it's little facets like those which make or break a scene, details that could easily get lost if your speakers are not able to render nuance correctly.

When they do square off with Baxter and his crew it's Charlie who fires the first shot, and it had some kick. Mayhem ensues as both sides start to unload on each other using pistols, rifles and a 'scatter gun' (what we call a shotgun today). The BalancedForce subwoofer gets into the act now as it has to shore up the bottom end. Each of the different weapons had its own unique sound signature with the appropriate amount of kick to differentiate it. At one point some of the villagers get in on the act; there are times when probably 2 dozen weapons are all going off at the same time. Shouts and screams from the town folk are mixed in among all the commotion, yet nothing was overshadowed, no matter how torrid the action got. Everything blended together effortlessly.

Set during prehistoric times, *10,000 BC* is a story about an outcast tribesman name D'Leh who struggles to fit in. He reasons the best way to overcome his reject status is to lead the clan's mammoth hunt and be instrumental in slaying one.

The beasts migrate through their land once a year so that would be his opportunity.

As they stop to graze the hunting party sneaks up using reed grass for cover. The closer they get the louder the mastodon snorting becomes, yet you could still distinctly make out the men's voices as they whispered commands to each other. At one point the hunters all jump up to startle the creatures with the intent to create a stampede and funnel them toward a narrow canyon and into an established kill zone. The ploy works, they all take off running. The men chase after shouting orders amongst themselves. The beasts are rampaging, trumpeting loudly in fear, their feet pounding the ground.

This is a busy part of the soundtrack but it didn't prove to be a challenge for this MartinLogan system, the dynamics were exceptional. Background music was woven into the action, adding just the right amount of intensity. One part of the scene I would have liked a bit more from was the stampede itself. There was plenty of impact from the mammoths footsteps, but not really enough depth to take this scene over the top. The BalancedForce 210 couldn't quite reach that low.

MUSIC

How best to sum up the MartinLogan Motion speakers when it comes to music? If the lyrics to a song elude you try listening to them on this system, bet they reveal themselves. With remarkable mids and highs, they excel at bringing music to life. Whether the volume is moderate or elevated doesn't seem to matter, the results are sublime either way.

"Big Log," Robert Plant. Likely not a song most of you know, and for those that do know it probably not one you would expect to pop up in a review. There's history behind it.

I'm in my mid 20's and for whatever reason life is going great; I have a really good job, nice salary, in a strong personal relationship,

MARTINLOGAN MOTION SPEAKERS AND BALANCEDFORCE SUBWOOFER

Specs

MOTION F20

DIMENSIONS: 44 3/4"x11 3/4" x 14 1/4" (HxWxD, with feet)
FREQUENCY RESPONSE: 35 Hz - 25 kHz ±3dB
RECOMMENDED AMPLIFIER POWER: 20 - 300 watts
SENSITIVITY: 92dB
IMPEDANCE: 4 ohms
HIGH FREQUENCY DRIVER: 1" x 1.4" Gen2 Obsidian Folded Motion Tweeter
MID FREQUENCY DRIVER: 5.5" Woven Fiberglass cone with cast polymer basket, non-resonant sealed chamber format, unibody cone construction
LOW FREQUENCY DRIVER: 2x 6.5" Aluminum cone with cast polymer basket, non-resonant asymmetrical chamber format, unibody cone construction
CABINET: Bottom ported
BINDING POST INPUTS: Bi-amp/bi-wire capable 5-way binding posts
WEIGHT: 60 lbs

MOTION C10

DIMENSIONS: 7 1/4" x 19" x 11 1/2" (HxWxD)
FREQUENCY RESPONSE: 63 Hz - 25 kHz ±3dB
RECOMMENDED AMPLIFIER POWER: 20 - 200 watts
SENSITIVITY: 93dB
IMPEDANCE: 4 ohms
HIGH FREQUENCY DRIVER: 1" x 1.4" Gen2 Obsidian Folded Motion Tweeter
MID FREQUENCY DRIVER: 2x 5.5" Woven Fiberglass cone with cast polymer basket, non-resonant sealed chamber format, unibody cone construction
CABINET: Rear Ported
BINDING POST INPUTS: Bi-amp/bi-wire capable 5-way binding posts
WEIGHT: 23.5 lbs

MOTION B10

DIMENSIONS: 12 1/2" x 7" x 9 3/4" (HxWxD)
FREQUENCY RESPONSE: 56 Hz - 25 kHz ±3dB
RECOMMENDED AMPLIFIER POWER: 20 - 200 watts
SENSITIVITY: 92dB
IMPEDANCE: 5 ohms
HIGH FREQUENCY DRIVER: 1" x 1.4" Gen2 Obsidian Folded Motion Tweeter
MID FREQUENCY DRIVER: 5.5" Woven Fiberglass cone with cast polymer basket, non-resonant sealed chamber format, unibody cone construction
CABINET: Rear Ported
BINDING POST INPUTS: Bi-amp/bi-wire capable 5-way binding posts
WEIGHT: 14.5 lbs

BALANCEDFORCE 210

DIMENSIONS: 19" x 19.1" x 19.4"
FREQUENCY RESPONSE: 20-120Hz ±3dB (anechoic through LFE effects input)
LOW FREQUENCY TRANSDUCER: 2x 10" cast-basket, high excursion, aluminum cone with extended throw driver assembly, sealed non-resonant asymmetrical chamber format
AMPLIFIER: 850 watts RMS, 1,700 watts peak
ROOM CORRECTION: Perfect Bass Kit (PBK), sold separately
AUDIO CONTROLS: On, Off, Auto
LOW PASS FILTER FREQUENCY: 30 - 80Hz
INPUTS: RCA (Left, Right, LFE), XLR (Left, Right, LFE), Speaker Level (Left, Right), 3.5mm 12V Trigger, Mini USB (for PBK), USB (cross-over & firmware updates)
WEIGHT: 96 lbs

have my health, tons of family and friends, everything you could want. The job comes with a company car, a BMW no less. Not many people in my age group could say what I was able to back then. There were a lot of beautiful sunny days that particular summer, which is where the connection to Big Log comes into the picture. For whatever reason this song always seemed to come on when I was out cruising, all the windows down and the sunroof open. To this day I still remember the sensation of wind blowing through the car with that song cranked up. There's no wind in my house at this moment, but I can certainly crank the volume and relive my youth.

This song has a simple rhythm. In some respects metronomic, almost hypnotic. The bass and synthesized drums were rich and potent, anchoring the bottom end with authority. The guitar had a crisp 'twang' to it, jumping out of the speakers with a sharpness to the notes. Robert Plant's voice was silky smooth, his distinct sound and signature style evident. The clapping hands were layered between the vocals and guitar, occupying their own unique space. Played at a volume that BMW's stereo could never achieve, I was transported back in time.

"Beer Drinkers & Hell Raisers" from ZZ Top. Seems I'm feeling nostalgic today, guess that means you're going for a ride down memory lane with me. This song is from my early years - 7th or 8th grade perhaps - and was on the band's landmark album Tres Hombres. This is from the time when ZZ Top was a rock and blues band, before they got into fuzzy guitars and slick MTV videos. At least a lot of you

should know this song.

Front and center were Billy Gibbons and Dusty Hill (RIP) trading vocals, their voices leapt out of the speakers and took aim straight at me. Hill and his bass were at their best on "Beer Drinkers & Hell Raisers" which is steady, driving, down and dirty. Frank Beard's snare had a nice snap to it, his kick drum keeping time just underneath Hill's bass. Gibbons' guitar was powerful, even more so when he over-dubbed the lead in the middle. Balance was exceptional, everything was perfectly weighted. This is what a ZZ Top song should be.

Ready for one more trip on the way back machine? "Hocus Pocus" by Focus, a one-hit-wonder that is perhaps the weirdest rock song ever written. "Hocus Pocus" has an uncanny ability to get stuck in your head, whether you want it to or not. Released in the US about the same time as Tres Hombres, this rondo style of song is an ode to the bizarre that contains a fast-paced rock beat and blistering guitar solos mixed with flute, accordion, whistling and yodeling. Yes, yodeling. Told you it was weird.

The bass guitar and kick drum are recorded on the heavy side. The BalancedForce 210 seemed to revel in the fact it was being used so much, happily pounding away for the entire 7-ish minute song. As things progress from one contrasting section to another there is always a driving rhythm to bridge them. During those interludes Jan Akkerman's guitar would just growl at you, like what you might hear in a heavy metal song. When Jan was ripping a solo it exploded out of the Motion speakers, piercing through and leaping ahead of everything else that was going on.

Most of the oddness in "Hocus Pocus" is attributed to Thijs van Leer who plays about half a dozen different instruments, including the aforementioned accordion and flute. He's also credited with the whistling and yodeling, along with the maniacal laughter at the end (which sounded strangely good coming out of the Motion speakers). You have to be in a certain mood for this song, but if you happen to be, a MartinLogan system might be the perfect companion.

CONCLUSION

While I never need a reason to listen to music, MartinLogan gave me an excuse to. Paired together the Motion speakers and BalancedForce subwoofer form a complete package, able to do just about anything you could want. This setup produces smooth yet dynamic sound, with solid bass output. No matter how many hours you sit in front of this system you will never feel the least bit of fatigue.

The Verdict

MartinLogan blends exquisite detail with razor-sharp imaging and rich bass, then combines those elements into stylish enclosures. The Motion speakers and BalancedForce subwoofer provide a very compelling option for the serious audiophile.

ERA 300 AND SONOS ARC 7.1.4 SYSTEM

A Match for the Ages

RATING

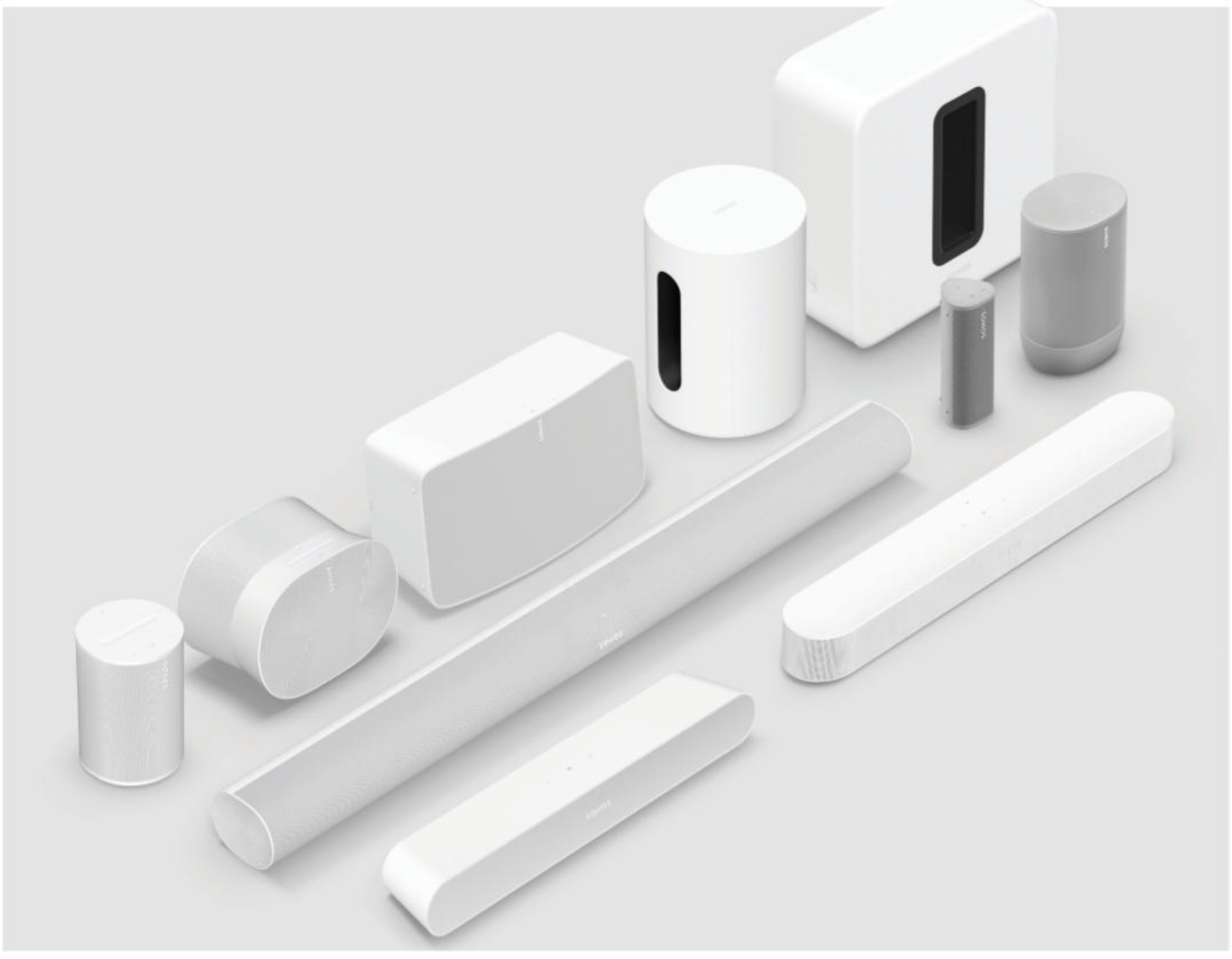
PERFORMANCE ★★★★½

FEATURES ★★★★★

ERGONOMICS ★★★★★

VALUE ★★★★½

By Rob Sabin



BACK IN 2020 I reviewed the then-new Sonos Arc soundbar for *Sound & Vision*, and it never left my family room. It's been swapped out multiple times while I reviewed other Atmos-compliant soundbars, and some of these were mighty impressive. But none could match the complete package that the Arc offered, including great audiophile sonics, compatibility with Sonos's superb wireless Sub and rear surround options, and what is arguably the best multiroom platform on the planet, with an easy-to-use app and the widest range of music streaming options you'll find in one place. I'll share a few tech basics on the Arc below, but for more details you can find my original review on soundandvision.com.

With the Era 300 Sonos owners can have 7.1.4 Dolby Atmos sound.

That said, my deepest yearning for my Arc system has always been for it to deliver a full-field Dolby Atmos experience. I run an AV receiver-based 5.1.4 Atmos/DTS:X system in my basement

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ERA 300 AND SONOS ARC 7.1.4 SYSTEM

theater with ceiling-mounted height speakers. So, I know what the full Atmos treatment can do for a good movie or well-mixed spatial music track. However, the Arc system, even with a Sub and a pair of conventional Play:1 bookshelf speakers as surrounds, only delivered a 5.1.2 Atmos configuration, falling short of a full-field Dolby Atmos experience; there's a noticeable collapse of the height bubble near the front of the room.

Sonos has long lacked an Atmos-compliant rear-surround option to complete the front-to-back soundfield. That limitation was rectified earlier this year with the new Era 300. I'll discuss my experiences using a pair as rear surrounds for the Arc in this review.

Priced at $449, the ERA 300 is primarily intended for enjoying the growing library of Atmos-encoded "spatial audio" music. You'll find my review of the Era 300—as a single speaker, a stereo pair, and a pair mated with the Sub—in a separate article alongside this one. Suffice to say it exceeded expectations as a music system. But I could barely wait to try the Era 300s as rear surrounds for the Arc.

ARC OF AGES

For those unfamiliar with the Arc, it's a 45-inch wide, elliptically-shaped bar that uses 11 drivers to deliver 3.0.2-channel sound—meaning that it emits left, center, and right-channel information from three front-baffle arrays, along with front-height information from a pair of top-mounted bounce-drivers canted toward the ceiling. Side-firing drivers on the end-caps help spread the sound around. To facilitate beam-forming for more precise and immersive spatial effects, Sonos cleverly mixes all the driver outputs. As for bass, the bar will go down to a respectable 60 Hz or so, but adding the Sub should give you a pretty solid response down to 35 Hz or below.

Over the years, Sonos has delivered consistent and reliable sonic character in pretty much every speaker I've tried. I'd characterize it as attentive to midrange and high-end accuracy, with relatively flat subjective response that neither pushes the mids to exaggerate voices nor the highs to create sizzle or the perception of greater detail. The speakers have an open, unveiled, and unforced quality, with larger models being highly dynamic. They track subtlety in vocal or orchestral swells and dips with aplomb, and roll off politely at their low-end limit without severely goosing the upper-bass and getting boomy or floppy.

Well-designed DSP for the amps lets them play at or near their volume-control limits without obvious distortion, though their max output may fall a bit short compared with some other premium wireless speakers and soundbars I've tested. Nonetheless, the Arc alone delivers in the mid-90dB range in my space, and more with the Sub. Aside from pushing the system for product reviews, I've never felt the need to max the volume in actual use.

It's essential to add the pricey $799 Sub or a pair of rear surrounds to an Arc, but if you're a home theater enthusiast it's a no-brainer despite the substantial cost. The Sub, now on its 3rd generation, is an elegant beast that uses opposing 6-inch race-track drivers that cancel vibration from a ported, slim-profile cabinet that can be stood up or laid flat. It's solid like a rock and blends well in most decors—you even get the option of a black or white finish. Since the app knows what Sonos speakers you're mating it with, there's an essentially perfect crossover to the rest of the system, especially after using Sonos's Trueplay auto-tuning.

The result is deep and well-defined bass reinforcement. Though the Sub hasn't changed substantially since its launch in 2012, the internals—processing power, memory and the like—have been steadily goosed through the current Gen 3, presumably to accommodate its pairing with newer Sonos speakers. I've had

a Sub Gen 1 in my home since 2013 when I mated it with the now retired Playbar soundbar, and Sonos sent me a Gen 3 with my Era 300 samples so I'd have the latest.

Used as rear surrounds, the Era 300's represent a substantial upgrade from the aging Play:1s I've also lived with since 2013. The Play:1 is a compact bookshelf that was first replaced with the Sonos One and more recently the new Era 100. It's a wonderful little speaker that's quite musical and images nicely in a stereo pair, but it lacks any real bass and, typical of most bookshelf speakers, fires only from its front baffle. The Era 300, on the other hand, is a beefy six-driver speaker with mid-woofer/tweeter arrays on both sides, a single tweeter in a waveguide on the front, and a canted height driver on the top.

As I learned during my music auditions, the Era 300 delivers bass on its own down to about 40 Hz, and has substantial power that allows it to hit mid-90 dB peaks in my somewhat voluminous basement listening space. Of course, at a cost of nearly $900 for the stereo pair, you should expect a little something. Happily, replacing the polite little Play:1s with Era 300s as back-up for the Arc delivered a whole lot of something.

PERFORMANCE

I began auditions by first swapping in the Era 300s, then added the new Sub later to see what difference it made. My pencil stands for the lightweight Play:1s were wholly insufficient to safely carry the Era 300's girth and 10-pound weight, and Sonos was unable to send me their accessory stands due to supply issues. So Sanus shipped me a pair of their own fixed-height Era 300 stands to plant on the back wall of my family room on either side of the sofa where the Play 1's resided. These sell for about $200/pair and come in either black or white to match the color of your speakers. They assembled in a jiffy, look great, and placed the speakers at what's said to be optimal height for most homes at 32.3 inches. Sanus sells an adjustable version as well.

The Sonos app makes it simple to delete or add speakers to any room, and I completed the upgrade by re-running the Trueplay calibration, which took all of about 5 minutes using my iPhone. Placement of the Era 300 can be critical to performance because it's a direct/reflecting design. I found they like a bit of space around them to let the sound bloom, including behind them, so the best scenario is one in which your sofa is out into the room rather than pushed against the wall like mine.

Don't worry if your room design won't permit that, because even with the speakers relatively close to my ears, I experienced an outstanding sonic bubble. It's not an overstatement to say that adding the Era 300's was like night and day. Before the upgrade, I had a natty little home theater that was impressive enough to garner comments from visitors for its clean sound, deep bass, and ability to generate rear surround effects. Atmos music and movies threw front height information that grew the height of the front stage and added a bit of front-to-back depth to it—something that pretty much every soundbar struggles with. But the system couldn't generate effects terribly far off the front wall, and it was rare that I heard any soundtrack elements coming from anything close to the sides.

All that changed in an instant with these new surrounds. The first thing I noticed was the obvious completion of the front-to-back Atmos dome, a truly coherent bubble from which sounds or instruments were finally able to emerge along any plane ranging from slightly behind my sweet spot on the couch to the top of the front stage above the TV. I was enthralled with how well the system blended; there is seamlessness to the surround soundfield now that just wasn't there before, even if I'd convinced myself it was with the Play:1s.

The enhanced front-to-back cohesion was the hoped-for and expected result. What I didn't expect, but also got, was a serious widening of the overall soundstage, particularly above me within the height dome, but also with ear-level effects. I attribute this to the Era 300's side-firing drivers, which throw significant energy out into the back of the room and interact with the Arc's side-firing drivers, located on the endcaps (or extremities) of the soundbar.

My family room is a narrow rectangle with the TV and sofa across from one another in the middle of the long walls, so those Arc end cap drivers are a distance away from the sidewalls and only marginally effective at widening the front stage. I learned from test tones that left and right rear-surround signals strongly activate the Era's outermost driver arrays. This made a huge difference in my space, and for the first time I was not only hearing a wide arc of placed audio objects and instruments above me, but also sound coming from the sides at something close to ear height.

As a final bonus, the system also gained some additional volume and authority, with some loud music tracks now hitting peaks of 104 dB on my SPL meter from my position 10 feet from the bar. That's a lot of juice, and it gave the sound a bit more ease at normal (i.e., safer) volumes.

With the system thus configured, the experience with Atmos movie soundtracks was full-ticket awesome. The most obvious change was that the music score in most Atmos mixes took their rightful place near the top of the dome rather than being pushed forward to the top of the front stage where it fights with the on-screen action. That separation, along with more precise placement of effects, immediately creates a more dimensional soundfield.

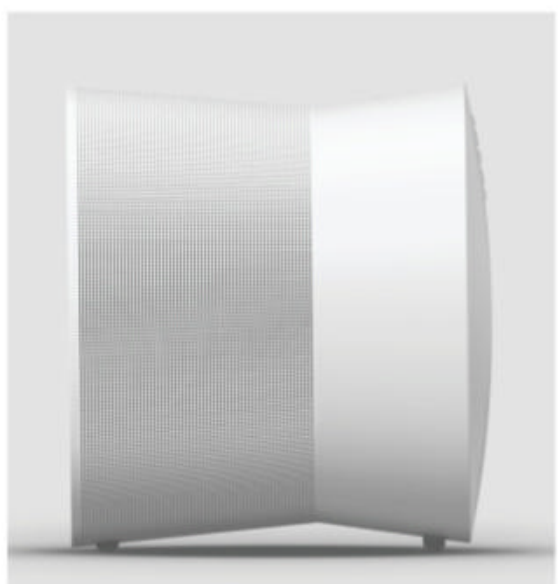
A clip from *Jurassic World:*

At a Glance

- \+ Outstanding full-dome Atmos movie effects
- \+ Superb spatial audio music reproduction
- \+ Plays loud without distortion
- − Expensive
- − No spatial audio streaming from the Sonos Tidal app

Price: $799

sonos.com



ERA 300 AND SONOS ARC 7.1.4 SYSTEM

Fallen Kingdom streamed from the Dolby channel on my LG OLED was one of many great demos I watched, with the tense score backing the scene from the middle of the ceiling and all manner of dinosaurs roaring, squealing, and stampeding through the space from front to back. The system also upconverted standard 5.1 soundtracks to use all the speakers, and did a superb job broadening both the width and height of the soundfield. Stadium sounds during sports broadcasts were broader and more convincing, and I got goosebumps when I stumbled onto a pro bowling broadcast that really put me inside the cavernous alley space, right down to the 80's pop music playing in the distance from the PA system.

Music tracks also took on a new perspective, starting with the stereo tracks in my Tidal reference playlist, which the system upconverted to use all the speakers, very carefully placing vocals up front where they belong but judiciously mixing some instruments toward the rear of the mix, and always above ear level. I spent *a lot* of time exploring Atmos spatial audio tracks as I'd done with the standalone Era 300s. I just can't believe how rapidly the Atmos music catalog is growing, and Apple Music and Tidal are adding more and better remixes of classic rock, pop, and folk tracks that place the listener inside the music: lead vocals up front, backup vocals often up top and spread far right and left, and individual instruments placed… wherever. Some of the recordings don't hold up from an audiophile perspective despite the engaging soundfield.

When it all comes together it's something to behold. Suffice to say that you haven't really heard "Lucy In The Sky With Diamonds" until you've heard the Atmos remix on a good system. (Note: The Era 300 is only compatible with Atmos streams from Apple Music on the Sonos platform; not Tidal. However, I *was* able to successfully play Atmos from the Tidal through the Arc via the Tidal app on my LG TV.)

Swapping out the Sub (Gen 1) for the newer Sub (Gen 3) shouldn't have made much difference based on everything I've read. I even checked the output of both subs from 100 Hz to 20 Hz using test tones, and after Trueplay tuning they measured essentially the same at every step, dropping off slowly below 40 Hz more rapidly below 30 Hz. That said, I heard tighter, better defined bass from the Sub (Gen 3) than what I'd been used to. Whether by virtue of improved DSP that takes advantage of the additional processing power or perhaps a more evolved driver design, there's a degree of control now I haven't heard before that results in louder, more impactful drum thwacks with less apparent overhang (lingering resonance), and extremely clean bass notes.

After updating the surrounds, better bass was just the icing on the cake.

Specs

ERA 300

DRIVERS: Mid-tweeter (4, unspecified), oval woofer (2, unspecified)
AMPLIFIER: Class D x 6, power unspecified
WEIGHT (lbs): 9.85
DIMENSIONS (inches, WHD): 10.24 x 6.3 x 7.28 inch

ARC SOUNDBAR

DRIVERS: 2 x 3-in aluminum elliptical cone woofer (8), 0.75-in silk dome tweeter (3)
AMPLIFIER: Class-D, one per driver (power unspecified)
INPUTS: HDMI-eARC/optical digital (shared, adapter included), Sonos wireless (Wi-Fi), Ethernet
DIMENSIONS (WxHxD, Inches): 45 x 3.4 x 4.5
WEIGHT (Pounds): 13.8

CONCLUSION

Nothing about the happy experience I just described will be news to the folks at Sonos, who know they have a genie in a bottle and put together discounted bundles for different upgrade scenarios. But even with that help, none of these options are cheap. Adding a pair of Era 300s to an existing Arc soundbar system costs $853. A pair with a Sub costs $1,617. A full system with the Arc, Sub, and Era 300s runs $2,471. No matter which option, that is a lot of coin.

But I feel confident saying that you're getting what you pay for. These are well-built audiophile speakers—you won't find any corners cut with cheesy subwoofer cabinets or plastic, cubelike surrounds. And if I learned anything doing this review, it's that the sum of the parts here adds up to way more than I expected. If you already have an Arc, adding Era 300s will likely catapult it to a level you just can't imagine right now. And if you're starting from scratch, this is a seriously impressive soundbar kit for under $2,500 that'll reintroduce you to your favorite music and movies in a way you haven't heard before.

The Verdict

Sonos has scored a knockout with the Era 300 spatial audio surround speaker, which finally brings the full promise of Dolby Atmos to their flagship soundbar.

SONOS ERA 300 SPATIAL SPEAKER

The Music

By Rob Sabin

RATING

PERFORMANCE ★★★★½

FEATURES ★★★★★

ERGONOMICS ★★★★★

VALUE ★★★★½

THE SONOS Era 300 is the latest in a new generation of Atmos-compliant 'spatial audio' speakers that bring a more immersive listening experience without the hardware and installation grief inherent with discrete surround systems. At $449 (in black or white), it costs more than its competition though, in typical Sonos fashion, it is engineered to a fare-thee-well and represents a considerable achievement.

One of the Era 300's strengths, of course, is that it's a Sonos—so it fits into a long-admired multiroom ecosystem. It's also flexible, employable as a standalone stereo speaker or in a stereo pair, with or without the Sonos Sub for low-bass support. Or, you can mate a pair with the Sonos Beam (Gen 2) or Arc Atmos soundbar as rear channels.

I use the Arc in my family room, so watch for my upcoming report on the full 5.1.4 Atmos home theater. For this Quick Take, I listened to the Era 300 as a single speaker and in a stereo pair, with and without the Sub, to get a feel for its music prowess.

Resembling an oval cylinder that's been cinched corset-like around its midsection, the Era 300 is a distinctive package measuring 10.24 x 7.28 x 6.3 inches (WHD) and weighing 10 pounds. There are grilles on the front and also fully surrounding the angled rear baffle.

Its six drivers include a single mid-tweeter on the front, another firing up from the top for height effects, and a pair of side-firing mid tweeters left and right, each mated with an oval woofer. Horns and custom waveguides are employed to improve dispersion or directionality.

Of course, control is most easily executed from the excellent Sonos app, but there are also basic touch controls on the front-top of the Era 300. They include three easily discerned buttons for Play/Pause, Previous Track and Next Track. I particularly liked the recessed ridge behind these that functioned for Volume Up/Down but also featured Vol +/- endpoints for more granular control.

There's a touch point behind that to turn voice control on or off, but also a small rocker on the backside that physically disconnects the mic array for added comfort. The mics obviously need to be on for the critical TruePlay tuning that optimizes the speaker for your environment. Bluetooth pairing is accomplished with a small pushbutton on the back.

The system plays stereo tracks from any Sonos-compatible music service, however, Atmos is only supported on Apple Music or Amazon Music Unlimited; Sonos won't say when or if Tidal Atmos compatibility is coming. I used Apple Music for my audition, which sends Atmos as lossless ALAC files at a slightly-better-than-CD 48 kHz. The Era 300 also offers up AirPlay 2 and Bluetooth, and control via Alexa or the new Sonos Voice assistant. There's an optional Line-In adapter for connecting a turntable.

ERA 300 BY ITS LONESOME

I started with a single Era 300 on an ear-height speaker stand centered in my basement studio space about 12 feet from the my listening position. CD-quality stereo from my Tidal "Reference" playlist exhibited the now familiar "Sonos sound," characterized by clean, unveiled midrange; a revealing but forgiving high end that lets you hear into the music but ultimately lacks the very last word in detail; and a full-sounding bottom that doesn't go to great depths but nonetheless won't cheat by exaggerating upper bass that could pass into boom or bloat.

I was surprised that bass measured relatively flat to about 40 Hz; goosing the Bass EQ added a welcome 5 dB or so in the 60-to-

SONOS ERA 300 SPATIAL SPEAKER

100 Hz range. Overall, the speaker was nicely dynamic, hitting a peak of 94 dB at max volume. The DSP limiting offered good control, though it was not without some strain on loud passages. No matter—pulling volume back to the three-quarter mark was plenty loud to let the speaker breath and keep things straight on busy, high energy pop tracks like Sheryl Crow's "What I Can Do For You," or Maroon 5's "Sunday Morning."

Vocals were big thanks to the upfiring driver, which still worked with derived information even on 2-channel content. But soundstage width and depth were both a bit constricted from the single speaker despite Trueplay tuning and the Era 300's attempts to reflect off the sidewalls of my relatively narrow space. As with any direct/reflecting loudspeaker, staging will be highly dependent on the room boundaries and acoustics.

Atmos tracks added another level of, well, spaciousness—widening the soundstage somewhat and adding both depth and height. Most older tracks remixed for Atmos were simply made taller and more dimensional, though I got excellent height effects from others. "We Don't Talk About Bruno" from Disney's Encanto threw some point-counterpoint voicing nicely above the horizon, and The Doors "Riders On The Storm," whose remix very pointedly places the thunderstorm effect in the height channels, communicated a convincing though width-limited local downpour.

ERA 300 IN A PAIR... AND WITH SUB

Although it doubles the system cost to just under $900, any reservation I had about the single Era 300 was fully placated by a pair of them stationed up front. The system now peaked in the same mid 90-db range with the volume set to only three-quarters, and with total cleanliness and control from the digital amps. The staging went from that of a struggling soloist trying to fill the hall on its own to the room-filling presence of a full ensemble.

The image now went edge-to-edge, and with Atmos tracks, utterly filled the room up and out toward my seat. Classic jazz tracks remixed for Atmos, such as "Have You Met Miss Jones" by the Oscar Peterson Trio, became more adept at recreating the acoustics of the recording space.

Specs

DRIVERS: Mid-tweeter (4, unspecified), oval woofer (2, unspecified)
AMPLIFIER: Class D x 6, power unspecified
WEIGHT (lbs): 9.85
DIMENSIONS (inches, WHD): 10.24 x 6.3 x 7.28 inch

Tossing in the Sub (Gen 3), a $799 option, takes the system price to $1,799, but brings the sonics up another serious notch. It pulled the audible low-end limit down to a solid 30 Hz, and boosted output by more than 10 dB from 100-125 Hz and 6 dB from 40-60 Hz. Queen's "Bohemian Rhapsody," a challenge for any system, was now six minutes of pure Atmos fun, with the soaring operatic backup vocals tossed about the front of the room, and with good handling of dynamic swells and the hard rock crescendo.

On Diana Krall's "Like Someone In Love," the opening upright bass notes were now tuneful, tight, and deep, while Krall's enormous, breathy vocal stretched toward the ceiling thanks to the Atmos mix.

CONCLUSION

One of the things that surprised me during this review is how much I enjoyed exploring the emerging wealth of spatial music out there, and what a respectable companion I found the Era 300 on that journey.

As a standalone speaker it is an impressive warrior that does more with both stereo and Atmos tracks than anyone would expect. But it is in a stereo pair, supported by the Sub, that it leaves the realm of over-achieving lifestyle speaker and transforms into a highly competent, full-range audiophile music system that delivers the magic of spatial audio without the need for an AV receiver, a bunch of speakers, and unsightly, snaking speaker cables.

I almost hate to take the easy pun here, but I do believe there's a new Era of music-listening settling upon us.

At a Glance

- \+ Excellent stereo and spatial audio
- \+ Works as a standalone, in stereo pair
- \+ Use as rear surrounds with Sonos soundbars
- \+ Good 'smarts with Alexa, Sonos Voice
- \+ Bluetooth compatible
- \+ Impressive industrial design
- − No compatibility with Atmos tracks on Tidal
- − Does not work with Sony 360 Reality on Amazon
- − Sensitive to speaker placement

The Verdict

The Sonos Era 300 successfully brings high quality spatial audio to life in a compact, standalone package.

LIVEDEAD

BEAR WAS NOT HAPPY. As the 1970s began to unfurl, live engineer Owsley "Bear" Stanley was increasingly frustrated with the quality of the live sound he was in charge of mixing night after night for San Francisco's multi-genre jam stalwarts the Grateful Dead. Seeing how the Dead had been quite steadily cultivating a reputation for creating a somewhat participatory multimedia live experience truly unto itself ever since they burst out of the Bay Area scene and vaulted into national prominence in the mid-1960s. And now, Bear had to address the growing pains.

The Grateful Dead went on a long, strange trip in search of premium live sound quality 50 years ago, and they initially found it with the Wall of Sound. Since then, the extended Dead family has consistently helped define just how good live music should sound both onstage and on record. Here's how they (mostly) did it.

BY MIKE METTLER

One big reason was the Dead's proclivity for insisting upon higher sound-quality standards for their studio recordings, as they were amongst the earliest bands to lay down their grooves with 16-track recording equipment—and Bear was adamant about how he could better translate that SQ-oriented aesthetic into the live arena by eliminating distortion, even in the 100,000-seat stadiums the Dead were finding themselves increasingly booked into playing across the country.

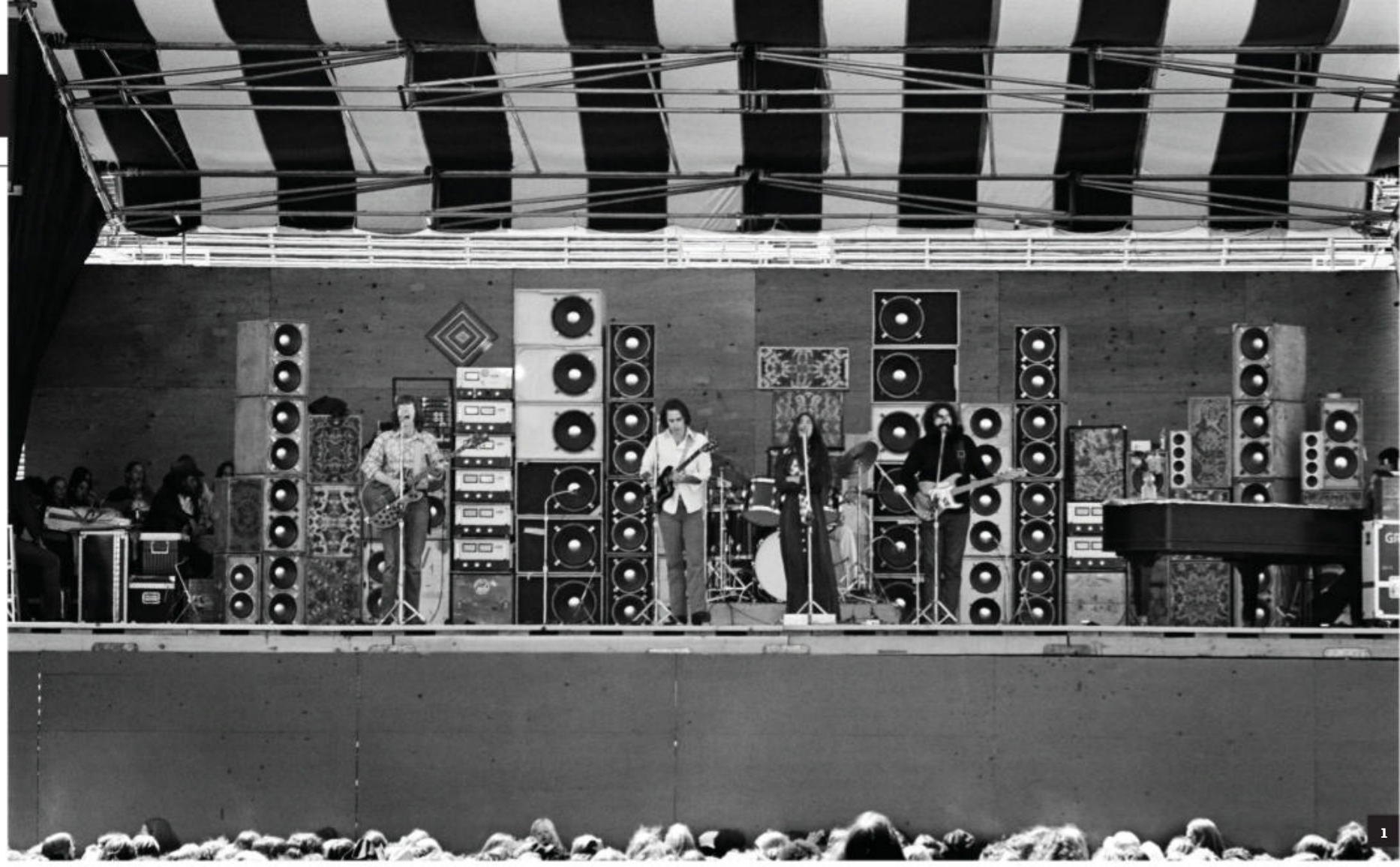
With that solemn charge, Bear began pursuing in earnest how to enact what would become known as the Wall of Sound exactly 50 years ago, in 1973. Unrelated to producer Phil Spector's same-named magic-touch studio-production sheen of the 1960s, the live Wall of Sound was instead meant to harness the full performance power of a band that viewed itself as being unrestricted by any of the typical societal and music-scene conventions of the time. Bear's vision for improving the Dead's live sound was one *massive* undertaking, to say the least.

Though the ever-shifting sands of time have resulted in some conflicting confirmations regarding what exactly was what, by most accounts, the original Wall of Sound appears to have deployed (count 'em) 586 JBL speakers, 54 Electro-Voice tweeters, and 48 McIntosh MC2300 stereo amplifiers, all to the tune of delivering a staggering 28,000 watts of raw power fueling six independent sound systems that utilized 11 separate channels.

In effect, each Dead band member and their instruments—vocals too—had their own respective channels and their own set of speakers in order to more accurately relay

The Grateful Dead's Phil Lesh, Bob Weir, and Jerry Garcia (left to right, above), onstage in Des Moines in 1973.

Photo © Larry Kasperek



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what they did best onstage. The design team behind it all consisted of Bear, Dan Healy, and Mark Raizene of the Dead's sound team, along with designers Ron Wickersham, Rick Turner, and John Curl of Alembic, the noted music-equipment manufacturer.

The first show Bear got to test the complete Wall of Sound's mettle with occurred on March 23, 1974, at the Cow Palace in Daly City, California. A truly wonderful night that featured such highlights as the debuts of classic Grateful Dead tunes "Cassidy" and "Scarlet Begonias" as well as rousing performances of "I Know You Rider," "Wharf Rat," and a full 15 minutes' worth of "Weather Report Suite," the balance of this show is available for one and all to hear via *Dick's Picks Volume 24 – Cow Palace, Daly City, CA 3/23/74*, a 2 CD set released via Grateful Dead Productions in February 2002. (More about the historical *Dick's Picks* series in a bit.)

Though use of the Wall of Sound only lasted through October 1974—exorbitant fuel costs related to its transport and other logistical impediments are ultimately what did it in—this groundbreaking sound system set the tone for just how good every subsequent Dead tour would sound for both the performers and the audiences.

Before we delve deeper into the ins and outs regarding the wonderful and wide Deadworld of aural delights—and how you can either relive and/or experience many of them for the first time on your own via a cavalcade of well-preserved and lovingly presented live recordings—we should first get some additional perspective on the Dead's live sound evolution from someone who was there before, during, and after it all went down. And that premise leads us to where noted producer and learned musician Paul Wexler enters the picture.

A Long, Strange SQ Trip

In the 1970s, following a stint working at KSAN in San Francisco, Paul Wexler—son of the iconic A&R maestro/producer Jerry Wexler—had found his way to Warner Bros. Records, where chairman and CEO Mo Ostin had installed him in a newly created position in charge of quality control for the label's vinyl releases. "People had started getting better speakers and separate components for the different parts of their stereo setups, so Warner Bros. needed someone to stay on top of this issue," Wexler clarifies.

To that end, Wexler began insisting upon receiving test pressings from all the pressing plants responsible for making Warner Bros. and its affiliated offshoots' LPs. As Wexler explains, he wound up spending much of his time "in the basement listening to test pressings and staring at grooves with a microscope to see if they were overcut, or if the grooves were banging into each other to cause skips." (Ahh, a man after our own SQ-oriented hearts.)

Whenever Wexler got any level of push-back from plant personnel about his test-pressing requests—being told things like, "a test pressing is only a snapshot of what's happening on one press out of many during one point in the run," for example—his response was quite simple: "Well, that's all true—but this will show the artist you can at least make *one* good record!"

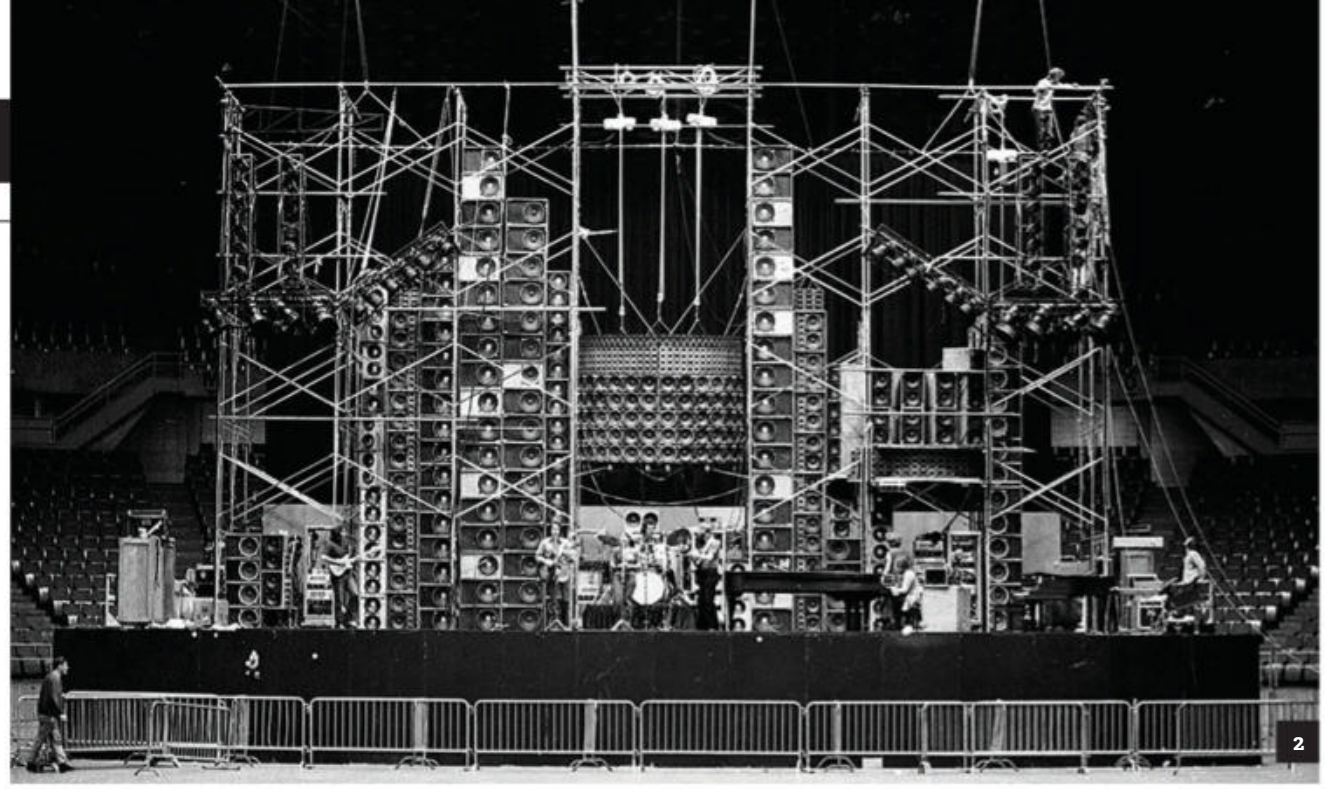
His meticulous QC work ultimately led Wexler to getting out of the basement to pursue a career above-ground as a record producer. One of his earliest, and most important, production gigs was born out of locating the various masters for a number of key Grateful Dead recordings—from both their early-era studio creations as well as their live output—for a critical 2 LP Warner Bros. release in August 1977 dubbed *What a Long Strange Trip It's Been: The Best of the Grateful Dead*.

By that point, Wexler was no stranger to the Dead—for one thing, he had spent a *lot* of time hanging with Dead guitarist/vocalist Jerry Garcia—so this pet project was right up his alley. "I was a fan, so I was very familiar with all their music," he relates.

"In 1969, I started listening to the band with *Aoxomoxoa* [released June 1969 on Warner Bros., and one of the first records to utilize 16-track recording]. After that, I went and listened to *Anthem of the Sun* a few months later [released in July 1968, a year earlier than *Aoxomoxoa,* on Warner Bros.], and then I saw them live. The first show of theirs I saw was February 14, 1970. Of course, the night *before* that, February 13, is a show the fans talk about a lot—but the 14th was still a great night."

Why are these dates discussed so much amongst the Dead faithful, you ask? Well, those February 13-14, 1970 Grateful Dead shows were both performed at Fillmore East in New York City on the same bill with The Allman Brothers Band—performance nights that also happened to contribute to the source material used for the ABB's truly legendary July 1971 *The Allman Brothers Band at Fillmore*

Photo by Alvan Meyerowitz/ © Retro Photo Archive



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East 2 LP set on Capricorn. It's worth noting that *At Fillmore East* was eventually expanded into a 6 CD box set and a 3 BD set with 5.1 mixes, both of which were released in July 2014 on Mercury/UMG, and both titled *The 1971 Fillmore East Recordings*. Importantly, the contents of each incarnation of *At Filmore East* were all taped by the above-noted Dead engineer, Owsley "Bear" Stanley.

As for the Dead themselves, eight tracks from those February 13-14, 1970 Fillmore East appearances were culled for July 1973's 2 LP Warner Bros. collection, *History of the Grateful Dead, Volume One (Bear's Choice)*. Certain bonus tracks appeared on latter-era CD releases of that album, but, two decades later, 18 tracks from these two key 1970 Dead dates ended up comprising the *Dick's Picks Volume Four – Fillmore East 2/13-14/70* 3 CD set released in February 1996 on the Grateful Dead label.

As was tradition with *Dick's Picks* releases—a series that distinctly focused on two-track live recordings and *not* the multitrack tape options used for other topline live Dead major-label releases—*Volume Four* came with the following "Caveat Emptor"-headered buyer-beware notation on the inner tray's inside-back cover: "This compact disc has been digitally remastered directly from the original half-track 7½ ips analog tape. It is a snapshot of history, not a modern professional recording, and may therefore exhibit some technical anomalies and the unavoidable effects of the ravages of time." Relative to these disclaimers, Bear himself would adjacently admit in the liner notes for *Volume Four* that, "Taping was just something that I always did, and the performance was always more important than getting the tape right."

1) Playing in the Band: The Grateful Dead commune live in front of their massive sound system while on tour in 1973.
2) Another viewpoint of how the Dead's live sound system setup continued to evolve.
3) Producer Paul Wexler, no stranger to the Dead, found much live Dead gold in the Warner Bros. vaults back in the day.

3

Wexler knew what the Dead taping score already was. Besides breaking bread and, er, other things with Garcia, Wexler also wanted to branch out and break into record production—and he had a firm idea about how he could do just that. "How am I going to start making records?" Wexler recalls of his thought process at the time, accenting his rhetorical question with a self-deferential laugh.

"There was this one Dead tape we all traded in the '70s—Harpur College, from 1970. It was one of the great shows of that era—probably one of *the* greatest, in fact." This benchmark Deadhead-favorite show was later released as a 3 CD set in June 1997 on the Grateful Dead label as *Dick's Picks, Volume Eight – Harpur College, Binghamton, NY 5/2/70*.

The titular Dick is, of course, Dick Latvala, then the Dead's vault archivist who was tasked with selecting said two-track live recordings for the archival series that commenced in 1993. All told, 36 volumes have appeared under the Dick's Picks banner. David Lemieux took over the archivist role when Latvala passed away in 1999, and has since released—as of presstime—46 volumes under the revised Dave's Picks moniker, well into 2023.

At any rate, Wexler sought the blessing of Warner's Mo Ostin to pursue his own Harpur College archival idea by telling him, "If I can get the Dead to give me the board tape, we could sell a lot of albums since every collector *loves* that show, and we all have crappy cassettes of it." Ostin's reply? "He's like, 'Okay, you know what you're doing,' because he knew I was familiar with the band after sending me to their shows for the past five or six years."

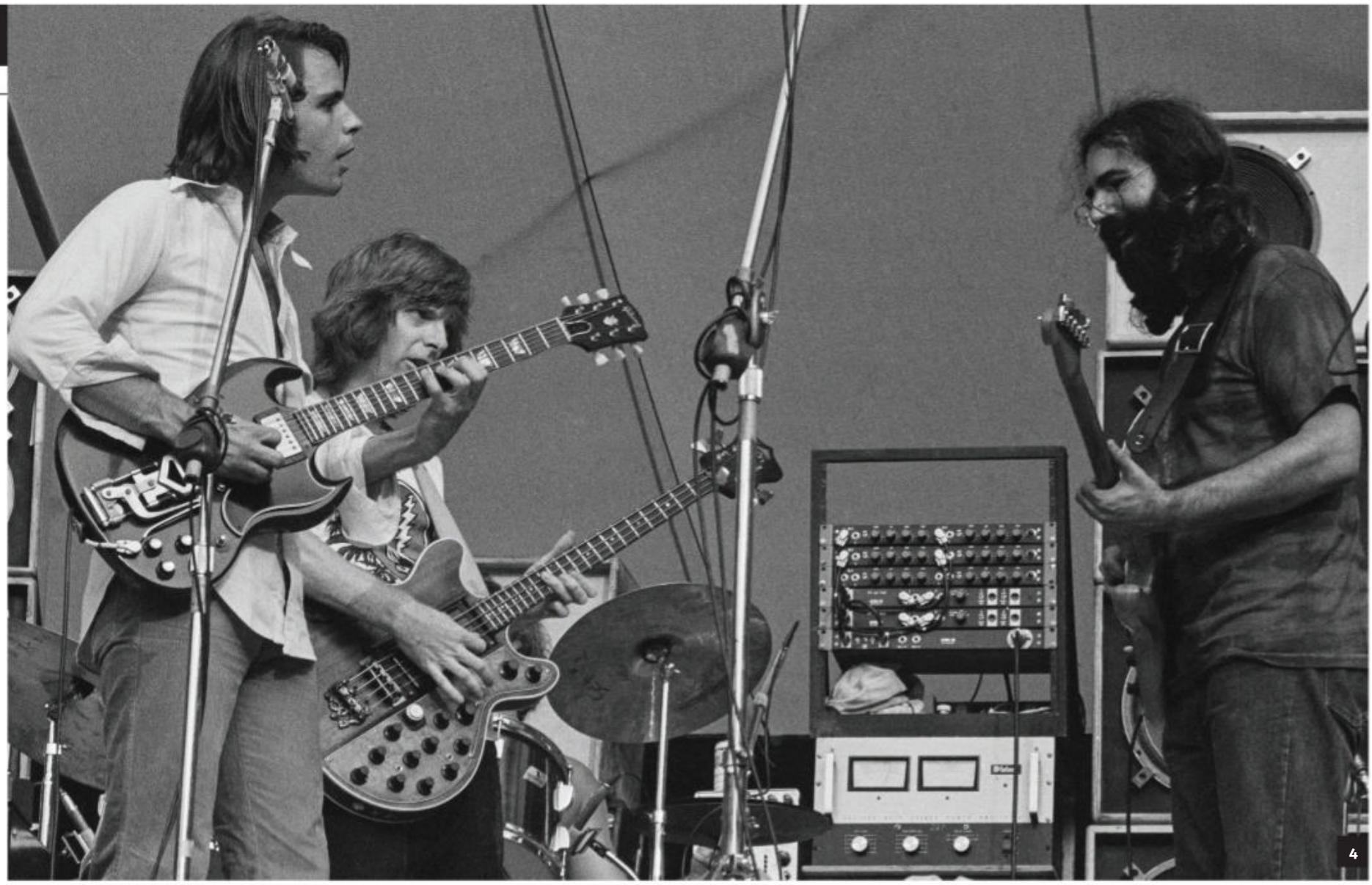
Easier said than done, however. "I was very green, though," Wexler readily admits. "So, I go to meet with Garcia, since we already had a relationship. I walked into the post-production room at the Warner film studio, which was down the road from Warner Bros. Records back in the 70s. It was where they were working on post-production for the live concert movie—the one that started out with a little bit of animation with the skeleton." (That would be *The Grateful Dead Movie*, which was released in theaters on June 1, 1977—a film with the intention of conveying the full Grateful Dead concert experience, and one that showed numerous full and/or partial live Dead performances from October 1974.)

Garcia saw Wexler as he entered the post-production room and said, "You know, Paul, we were trying to figure out how we're going to afford to finish this movie—and now here *you* are!"

Through a deal brokered with the Dead's lawyer, Hal Kant, Wexler was to give the Dead a check with a number in the high five-figure range on it, and then he'd get the Harpur College masters in return. "Now, foolishly, this is where the green part comes in," Wexler continues. "I gave him the check from Warner Bros. without receiving the masters at the same moment. I *never* received the masters." Still not even to this day? "Still not to this day. Although, of course, it's a *Dick's Picks* now [the aforementioned *Volume Eight*]."

When Wexler later called Kant for an explanation, the lawyer responded, "You know how they are!" Once Wexler accepted the fact that he wasn't getting the Harpur masters, he thought to himself, "I just spent all of Mo Ostin's money, and I have *nothing* to show

Top: photo by Richard Pechner.



4) Weir, Lesh, and Garcia all share a collective Dead mindmeld via guitar and bass at RFK Stadium in Washington, DC on June 10, 1973.

for it. Well, you know what? I'm going to put something together. It doesn't matter that I don't have this tape. I am going to walk in and deliver *something* to Warner Bros. I'm not going to tell them I gave them that money, and pissed it away. So, I went into the vaults where Warners kept all their tapes, and I started going through everything."

Wexler initially zeroed in on some early live Dead performances, but he had some level of trepidation about taking them any further. "I mean, I was so moral back then," he concedes. "There was a live tape they recorded early in '67 at the Shrine in L.A., and I had an eight-track master of it. I got to mix the tracks—which was really a blast—but I didn't want to put any of it on a record because I just had all these weird moral compunctions about screwing with their stuff." (Eventually, that show was released as a 3 CD limited-edition set via Rhino in January 2016 as *Shrine Exposition Hall, Los Angeles, CA 11/10/1967*, and it was also included in a truly colossal 80 CD Rhino box set in October 2015 titled *30 Trips Around the Sun*.)

Instead, the producer went back through the entire Dead catalog with the impetus being, "How would I present this music in the most representative and accessible but interesting way?" The result—Wexler executive-produced the aforementioned *What a Long Strange Trip It's Been: The Best of the Grateful Dead* multi-platinum-selling compilation initially released by Warner Bros. as a 2 LP set in August 1977. *Long Strange Trip* covers the Dead's prime 1967-72 period on the label, featuring ten studio cuts on LP1—including the long-sought-after April 1968 2:44 single version of "Dark Star"—and eight live tracks on LP2. (The comparable 2 CD set was released in 1989.)

The live tracks on LP2 are all pre-Wall of Sound, but they do represent prime of-era Dead, with five of its tracks taken from *Europe '72*—"Jack Straw" and "Tennessee Jed" from Paris, "Cumberland Blues" and "Ramble on Rose" from separate London gigs, and "Brown-Eyed Woman" from Copenhagen—plus one from *Live/Dead* (1969; a "St. Stephen" excerpt from San Francisco), and two from *Grateful Dead* (1971; "Me & My Uncle" from Fillmore East, and "Playing in the Band" from the Hammerstein Ballroom in New York City).

"I am very proud of that record," asserts Wexler in regard to what ultimately comprised *Long Strange Trip*. "I did it myself with no input from the band, and no input from anybody. I art-directed it and I sequenced the record too. I went down and met [legendary underground comix artist] Rick Griffin—which was an honor for me—and I hired him to do the cover. And. . . (slight pause) I did it. I just did it," Wexler concludes, with a lingering sense of wonder about it all.

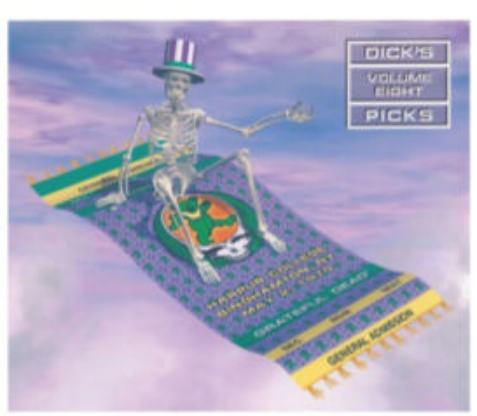


Photo © Jonathan David Saban

Come Hear Uncle McIntosh's Band

Wexler knows the Wall of Sound quite well. "I saw a bunch of those shows with that PA and that setup," the producer confirms about his own first-hand experiences seeing and hearing that sound system in action. "And, you know, it was *scary*. I mean, Phil [Lesh, the Dead's bassist] would play a super-low E, and the building would *rock*. Yeah, it was *serious* impact." That may be an understatement since, as you'll recall, the Wall of Sound duly deployed 48 McIntosh MC2300 stereo amps and other gear, all primed to deliver a not-so-modest 28,000 watts.

To this day, McIntosh's relationship has continued ever onward with the Dead camp and its many offshoots—such as the currently winding down Dead & Company touring collective—after the Wall of Sound came down. Said relationship has been "nurtured by mutual admiration and the understanding of the importance of sonic excellence," according to McIntosh marketing coordinator Mark Christensen.

For one thing, longtime Dead guitarist/vocalist Bob Weir "has been a close friend of our brand over the years," he continues, "and before the professional relationship began, McIntosh had a deep appreciation for the Grateful Dead as a band and their music—and we still do today.

McIntosh recognizes and respects the band's unique universe, their captivating performances, and their commitment to delivering extraordinary live experiences to their devoted fanbase."

That's not just marketing speak, mind you, as Christensen further posits, "The Dead's music and their world are very inclusive. Anyone can join in. McIntosh has a profound appreciation for the band's dedication to music and sound, further solidifying the synergy between the two entities. Today, we see their legacy as a true American legend. They represent a fundamental moment of the cultural story of our country, and elevated music with their own style. We are proud to call them friends."

In addition to that ongoing, friendly synergy, McIntosh have more recently made their presence known during intermission on this summer's Dead & Company's "The Final Tour 2023" dates by way of having vinyl played through a McIntosh MT10 Precision turntable and a C12000 preamplifier, both by way of broadcasts via in-stadium Jumbotron systems as well as making those intermissions available online via live streams.

McIntosh has also released some Grateful Dead-branded, limited-edition wireless speakers—the RS150 ($1,250 each) and RS250 ($3,000 each)—that sport recognizable, signature Dead artwork on the respective glass faceplates that are centered between the blue-hued watt meters near the top and the green McIntosh logos and austere model numbers below.

Tellingly, McIntosh claims to not have had any direct input or influence over how the Dead and their FOH engineers and related live-sound teams deploy any of their gear onstage. "We did not have any goals since we did not know about their plans," Christensen explains. "We built the relationship further simply because of our mutual love for each other's craft—and for the love of music." That's a win-win approach, given the overall aural results. Adds Christensen, "Our meticulous craftsmanship and attention to detail ensure every nuance of the band's sound is faithfully reproduced, whether it's the intricate guitar and bass tones, the ethereal keyboards, or the powerful vocals."

After that initial run in 1974 with those imposing four-dozen McIntosh MC2300 stereo amps had to be pared back for various reasons as outlined earlier, Dead band members kept using MC2300s in their touring rigs for many an ensuing year. (In numerous concert photos taken during the Dead's 1980s incarnations, plenty of those MC2300s can be seen onstage.) And, as Christensen rightly points out, the late, great Jerry Garcia's infamous "Budman" MC2300 amp sold for $378,000 at auction in 2021.

The expanded Dead & Company (a.k.a. Dead & Co.) lineup has seen the likes of guitarist/vocalist John Mayer, bassist Oteil Burbridge, and keyboardist Jeff Chimenti enter the family fold alongside the likes of longtime Dead stalwarts Bob Weir and drummers Mickey Hart and Bill Kreutzmann.

"John Mayer became another good friend of our brand," Christensen confirms. "That makes this relationship unique, since there are new people working on it and new fans to open the discussion with, but all of it is driven by the same love of music that initiated the first talks [between McIntosh and the Dead camp] decades ago.

"It's as authentic as it gets—and this is rare. We don't really have a clear strategy in mind nor business objectives when talking with our friends from Activist [Artists Management] and the band—we just know this relationship feels right for the band, for us, and for the fans. That is the most important."

As the name of the current summer tour's endgame suggests, Dead & Company's live schedule *appears* to be bringing the curtain down possibly for good, but McIntosh is taking a longer view."Over the years, the relationship between McIntosh and the Dead organization has blossomed into a true partnership based on mutual trust, respect, and a shared commitment to exceptional sound quality," Christensen reiterates. "McIntosh has had the privilege of contributing to the band's iconic history, and anything we do today is geared to pay tribute to that history."

Regardless of what may come, the legacy of the Wall of Sound's overall aural aesthetic is quite secure. "The Wall of Sound helped usher in the modern concert sound systems used today," Christensen believes. "Up until that time, most concert sound reinforcement was done through a simple PA system. But as the size of venues and crowds grew, artists and their engi-

5) McIntosh recently released limited-edition, Grateful Dead-branded wireless speaker gear dubbed the RS150 and RS250, both of which sport that infamous Dead logo and other Dead-related artwork dancing across the faceplate.

neers knew they had to find better solutions. The Dead and their McIntosh-powered Wall of Sound were at the forefront of that, and we are very proud to have played a role in the evolution of concert sound reinforcement."

Fare Thee Well

After this summer's apparent final run for Dead & Company, the live Dead experience may—underscore *may*—finally be put to bed, but we shall see. If anything, and just as McIntosh's Christensen alluded to, the vaunted Wall of Sound caused many artists and concertgoers alike to re-evaluate what they should come to expect out of live sound reproduction onstage and, ultimately, from the many ways live shows could subsequently be released for posterity.

Not for nothing, but the Dead universe has long cultivated and encouraged a vibrant tape-trading community, but they have also officially released *hundreds* of live albums under their own umbrella. Many like-minded bands and artists have long since followed suit, including the likes of Phish, Pearl Jam, Metallica, Dave Matthews Band, and Bruce Springsteen, to name but a few—all of them appearing to have no lingering qualms about regularly releasing relatively unretouched board mixes of practically every tour stop new and old for their respective fanbases, whether it be via physical or digital media, or a combination of both.

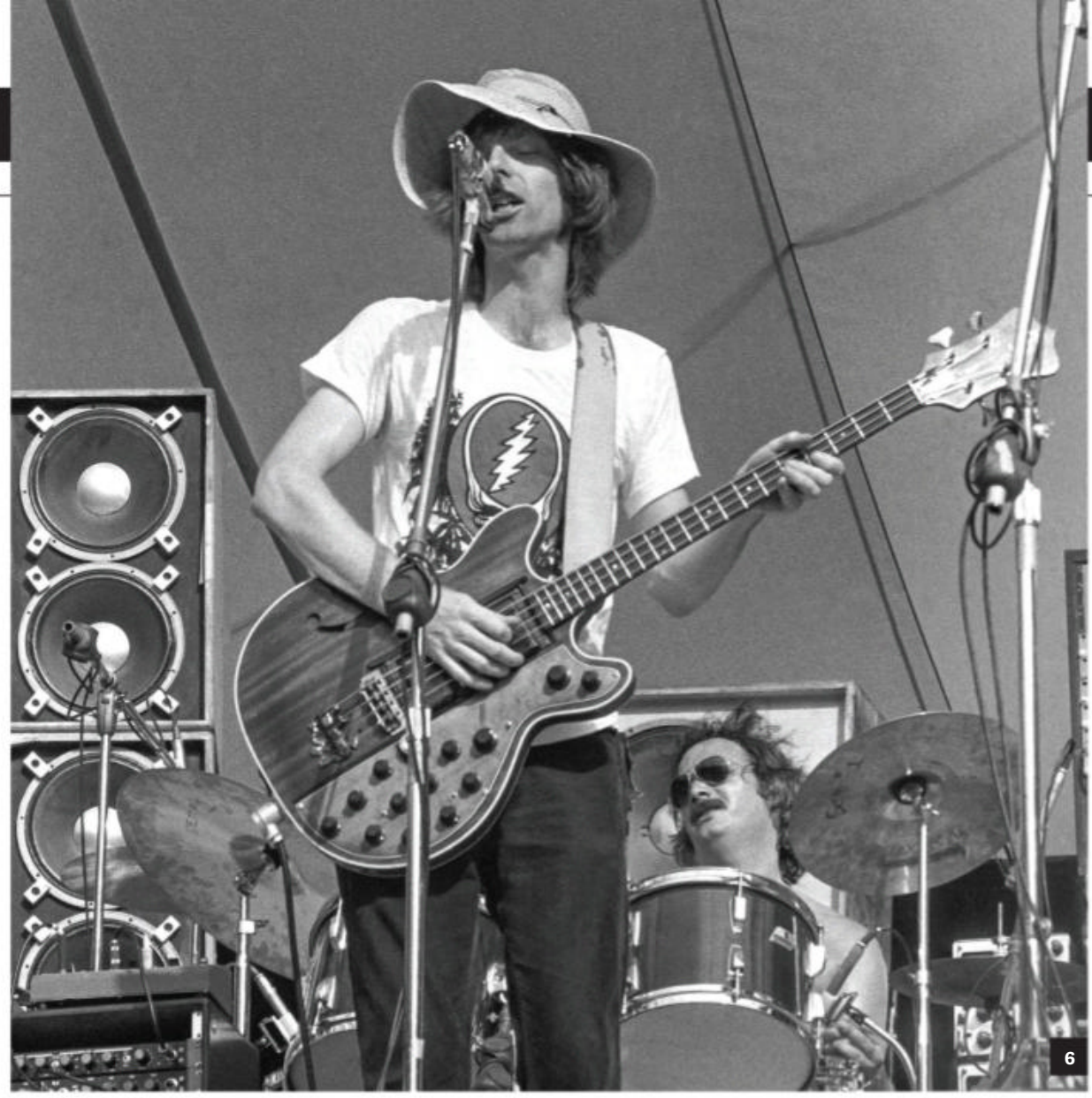
Choosing one's favorite live Dead show—or shows—has, in effect, become its own cottage industry. Besides most of the earlier-cited gigs in this story, some other personal favorite Dead shows of mine have seen official releases on a grander scale here in 2023. First, on Record Store Day back in April, a 180-gram 5 LP box set from Rhino titled *Boston Garden, Boston, MA 5/7/77*—a.k.a. *Boston 5.7.77*—effectively completed a trilogy of live releases from the Dead's well-acknowledged spring 1977 tour peak, with tracks like "Peggy O," "Friend of the Devil," and "Terrapin Station" hitting all the right notes.

More recently, the limited-edition 17 CD *Here Comes Sunshine 1973* box set cultivated by Rhino—capped at 10,000 copies with an SRP of $186.98, and available exclusively via Dead.net—is nothing short of a true sonic marvel. The previously unreleased *Iowa State Fairgrounds, Des Moines, IA (5/13/73)* performance that opens the box's proceedings offers sublime takes on "Big River," "Jack Straw," and, most especially, "Box of Rain."

Meanwhile, the five-hour box-set closer, *RFK Stadium, Washington, DC (6/10/73)*, is a Bear-recorded special featuring "Morning Dew" as the opener, plus a "Dark Star" for the ages, and guitarist Dickie Betts and drummer Butch Trucks of The Allman Brothers Band joining in on a final set that includes a run through Bob Dylan's "It Takes a Lot to Laugh, It Takes a Train to Cry" and an epic "Not Fade Away" with some special song-segue twists and turns along the way that I won't spoil here.

So compelling is this full *RFK Stadium* set that it's also gotten the nod for having separate 4 CD and 8 LP releases of its own.

To invoke a slight variation on *the* most overused Dead-related catchphrase there is, it's been a long, strange, and truly wonderful trip to get to where we are with live sound reproduction here in the 21st century. Regardless of all the tiresome clichés about the band itself and their forever-devoted legion of Deadheads the world over, this fact remains—the Grateful Dead are a band, an organization, and an ecosystem that's truly passionate about sound quality, and they have been able to share it as best they could on the global stage. Rising up to paradise, we know the Grateful Dead and their music will continue to shine.



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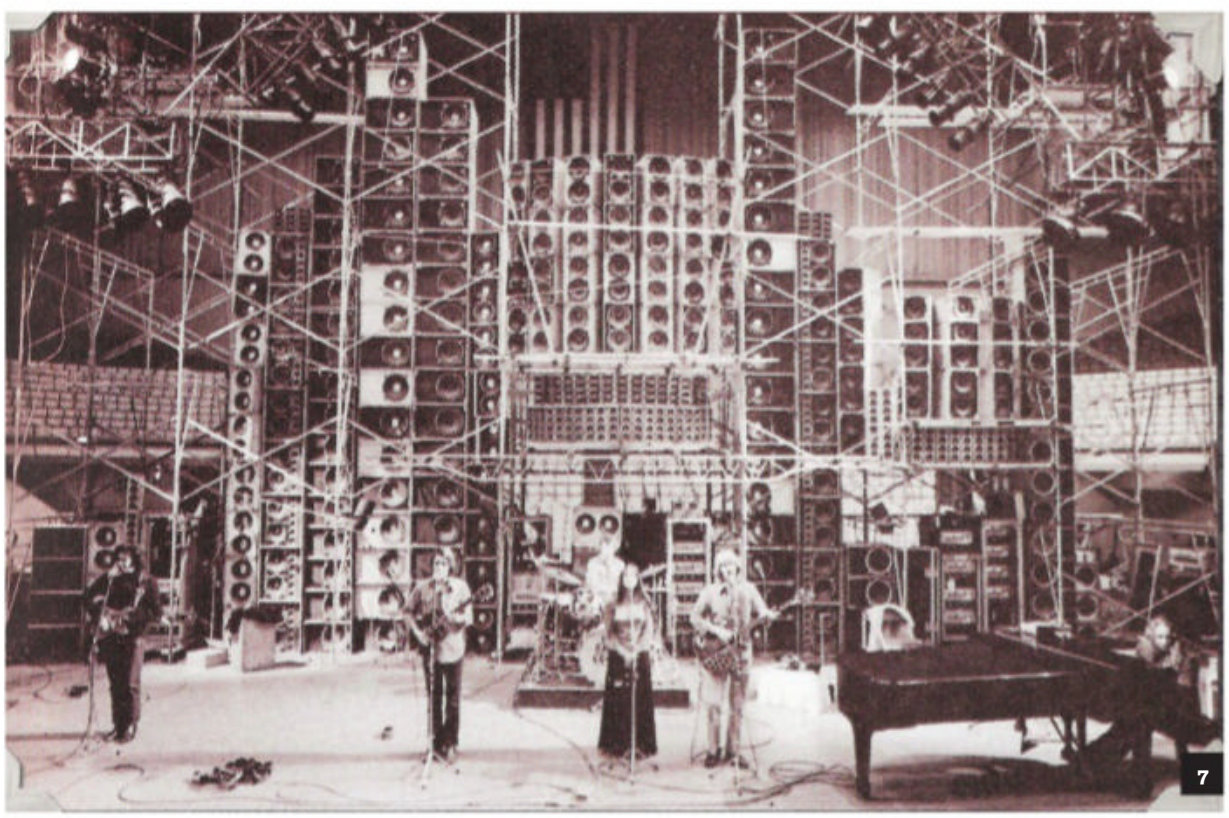

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6) Phil Lesh lets his low-end lovelight shine.
7) The full glory of the Grateful Dead's Wall of Sound in 1974.

Photo by © Jonathan David Sabin 2010

ARENDAL 1961 9.4.4 SPEAKER SYSTEM

Total Immersion

By Mark Henninger

RATINGS

1961 Tower
PERFORMANCE
BUILD QUALITY
VALUE

1961 Center
PERFORMANCE
BUILD QUALITY
VALUE

1961 Height
PERFORMANCE
BUILD QUALITY
VALUE

1961 1V Subwoofer
PERFORMANCE
BUILD QUALITY
VALUE

THE 1961 system from Arendal is one of the company's three speaker series, the other two being the 1723 and 1723 S. 1961 is more compact and more affordable, but is otherwise consistent with Arendal's design philosophy and aesthetics. This isn't what you'd call overpriced audio jewelry. It is modern and solidly built and aesthetically pleasing, but most importantly, it performs and offers great value.

The company was founded in 2015 by Jan Ove Lassesen, whose father (also Jan) founded an electronics store in Norway that grew to be the most popular in the country. I first caught wind of Arendal last year from Jim Wilson, who reviewed a 1723 S system recently. I quickly discovered a lot of positive buzz about the company in online forums, with many praising their great sound and aesthetic appeal, as well as their strong performance measurements.

We decided to go with nine tower speakers, four height speakers and four ported subs. Why nine towers? In order to experience using the system with one of the towers acting as the center channel. Now I totally get that a tower serving as a center is not always practical to use with a TV. So Arendal also sent a center channel speaker. However, the main focus of the review is on using the tower speaker to handle all nine ear-level channels.

Arendal's business model is Internet Direct, meaning it cuts out the intermediaries in distribution and retail. The premise is that an ID brand can deliver more value by cutting out overhead. The company's modus operandi is to offer free shipping and a 60-day no-commitment trial period plus trade-ins. And they back all their speakers and subs with a 10-year warranty for passive components, 5 years for electronics.

FEATURES AND SPECIFICATIONS

The 1961 series has all the different types of speakers you need to put together a high performance home theater system. And it offers ported and sealed subs that are a performance and aesthetic match for the series.

Arendal publishes extensive specifications, including graphs that show polar response in 10-degree increments ranging from on-axis all the way out to 90 degrees. It is considerably more in-depth than what you find from other companies. Moreover, based on the measurements from independent reviews as well as my own rough measurements, it would appear that the company publishes *accurate* specs.

Whatever speaker or sub you

buy from Arendal, it'll be made of HDF (high-density fiberboard) for maximum rigidity, and feature either a matte white or matte black painted finish. All models have magnetic grills. For the review, the towers and center were in a white finish and the height speakers were black.

1961 TOWER

The tower's 2.5 way design features four 5.5-inch woofers and a 1-inch tweeter in a deeply recessed circular waveguide. The two lower woofers play up to 120 Hz, while the two flanking the 28mm soft-dome tweeter are crossed over at 1200 hz. This speaker is specified at 49 Hz to 20 kHz ± 3 dB response while sealed, and 39 Hz to 20 kHz ± 3 dB response when operating vented. This 4-ohm speaker is rated to handle up to 350 watts and its sensitivity rating is 87dB/2.83v/1m—which is pretty low but expected in a compact speaker that plays deep.

1961 tower speakers offer the option of running ported or sealed and Arendal provides a foam wedge for the slotted port.

This is a compact tower model with a sloped baffle. You can choose to only cover the two lower drivers for protection or a different aesthetic. Since I have no kids or pets, I run the speakers with the grills off.

1961 CENTER

A *very* compact sealed center channel speaker. I requested the very compact sealed center channel speaker because not every installation can accommodate a tower speaker for a center and I wanted to try it. It has two 5.5-inch woofers and the same waveguide-mounted 28 millimeter tweeter as the tower. This 4-ohm speaker's frequency response rating is 73 Hz to 20 kHz ± 3 dB.

The center has the same sensitivity rating as the tower and can handle up to 250 watts. It is not any additional burden on the amplification versus a tower, as would be the case if it had lower sensitivity. Nor is this center a limiting factor in terms of output when used in conjunction with tower speakers and subwoofers. While some may balk at a 2-way MTM design and grumble about off-axis comb filtering, I found any such effect to be minimal; the center speaker matched the towers in tonality and easily blended into the overall soundfield.

1961 HEIGHT

A robust dual-purpose speaker. You can use it as a topper for reflected-sound height effects, which also allows for an easy installation. The sloped baffle and built-in keyhole slot wall mount made them easy to hang and use as wall-mounted height speakers, which is how I deployed them.

The entire back (or bottom, depending on how you use it) of the speaker is covered in rubber. It's not just little stick-on rubber feet, it's the entire back of the speaker. This is particularly helpful for wall-hanging as it ensures a snug, positive contact.

1961 SUBWOOFER 1V

A large and powerful ported 12-inch driver design with a 550-watt amp, the 1961 1V makes the clever choice to put the driver on the side of the sub, rather than the front or bottom. It's an aesthetic win and it comes with a circular low-profile magnetic grill.

What's more this sub has a built-in DSP. Although you do have to program it directly (since there's no app), it offers a 3-band parametric EQ that allows you to tune it to a room, even in systems without room correction.

You get the option of running sealed or ported, and you get two EQ settings. EQ1 offers 16-200Hz (+/-3dB) response while EQ2 delivers 20-200Hz (+/-3dB). The accuracy of these specs is born out in independent CEA-2010 testing (performed by Audioholics) that Arendal also publishes. At its core it's a quality sub that legitimately reaches to 16 Hz and below. You can likely find a few subs that offer a few more dB per dollar, but not without giving something (build quality, cabinet size, and DSP come to mind). Unlike many speaker companies that do not offer a truly complementary sub in terms of looks and performance, Arendal nails it.

SETUP

The goal of this setup is to put a 9.4.4 system in my loft's main

At a Glance

- \+ Powerful, accurate sound
- \+ Relatively compact
- \+ Attractive
- \+ 10-year warranty
- − Sub lacks an app
- − Only available in black or white

Total system cost: $12,685.50

1V subwooferr: $1199

1961 Tower: $1799/pair

1961 Center: $599

1961 Height: $799/pair

arendalsound.com

478.449.1150

living area and achieve home theater-quality sound. Since I'm renting and both the floors and ceiling are made of concrete, my best choice is standalone and wall-mounted speakers

The size and shape of the loft is kind to speakers, the main living area is 35 x 20 x 13 feet with the loft area off to the side adding another 200 square feet. The total open-air volume of the space in which the system is located is around 13,000 cubic feet, so it takes some significant wattage and air displacement to move the air needed for visceral bass.

The 13-foot ceiling helps the wall-mounted height channels produce a proper elevation effect. I also managed to find optimal spots for each speaker that resulted in near perfect symmetry at the main listening position. The distance to each ear-level speaker ranged from 10 to 12 feet and the height speakers were all 15 feet away, so very little adjustment was needed to get the uncalibrated system to sound fantastic.

When I take clustered measurements for room correction the room's effect on the speaker response is apparent. But the goal of a good speaker design is to work with the room. In this case, I observed a near-textbook frequency response curve, except for the bass being a bit too strong—likely due to room gain.

I chose to leave the supplied foam wedges in the ports of all the speakers since the sealed configuration is closest to an ideal room response, and therefore required the lees adjustment by room correction. Before it begins to drop off, sealed bass extends down to around 45 Hz (in line with the -3 dB spec for 49 Hz sealed bass). That means the slopes of an 80 Hz crossover to the subwoofer will be symmetrical, ideal for home theater perfectionists.

If I was using these as standalone speakers for a 2.0 music system, I'd unplug the ports. But in my setup there was no reason to do so.

The 1961 1V sub offers two EQ settings and the option to run sealed or vented. In my humble opinion if you want a sealed sub, you should purchase the sealed version so I ran the subs vented.

Using EQ1, which prioritizes extension over output, I got what I look for in a subwoofer system. Chest slam, tangible textures, tactile infrasonics, it's all there in abundance. Having this much bass firepower can make watching certain movies that are not shy about shaking things up a truly tactile experience.

Much as I enjoy pushing a high-performance audio system to its limits, keeping the peace with my neighbors demands that I use top volume sparingly. What matters more than sheer loudness is that the bass is tight and extends beyond the limits of human hearing at moderate listening levels I use for cinematic viewing on a weeknight.

That's not to say I'm always cautious with the volume. On a Friday or Saturday night, when there's a good new comic book, action, or sci-fi movie to watch, I'm not averse to cranking it up to movie theater levels.

The good design of the 1961 system is most apparent in the room correction measurements. Frequencies above the Schroeder transition point (where the room stops having the primary influence upon the response) are sufficiently close to an optimal room response curve that there's little audible difference between using room correction and leaving it off, aside from the bass. This is great when using a system like Audyssey XT32 or Dirac Live that lets you restrict the correction to a chosen frequency at or below Schroeder—which is visible in the measurements. With four subwoofers, the uncorrected bass response is even smoother than what I'm used to. The only issue I encountered was a narrow null at 40 Hz, which remained at -7 dB even after correction. Based on what I observed in the measurements, I set a limit for the room correction at 250 Hz.

PERFORMANCE

The consistently sublime sound of the 1961s is no accident, it is the result of applying audio science and taking care of the details. The main caveat is these speakers are power hungry and 4 ohms, so you don't want to just hook them up to any old AV receiver and call it a day (it'll heat up pretty quickly if pushed). If you use them with anything but a flagship-class AVR, they are best paired with a powerful amplifier that can more easily drive them to their limit. However, the Denon A1H proved up to the task and in my view is a perfect match for these speakers.

The high performance of the Arendal 1961 speaker is not only audible but also verifiable through measurements. Not necessarily my own, which are derived from room correction and focus on the main listening position in my room. This is a rare speaker where the system sounded balanced without any adjustments whatsoever, aside from setting an 80 Hz crossover and tweaking the subwoofer output levels. The company publishes polar response charts (unlike most speaker makers) and Erin Hardison's Klippel Nearfield Scanner "spin" of the Arendal 1961 bookshelf speaker demonstrates it is a great design with commendable linearity and resistance to dynamic

ARENDAL 1961 9.4.4 SPEAKER SYSTEM

compression at high output. It is reasonable to extrapolate that the towers featured in this review offer a similar listening experience, but more of it.

As I settled to hear the Orb's Pomme Fritz album, I found the Arendal 1961 speakers not merely producing sound, but crafting an electronic orchestra in my room. The audible nuances in the tracks circled around my head with ease, creating an audiosphere as enveloping as it was entrancing. And the center channel featuring the tower revealed striking detail while blending with the other channels. The four subwoofers, subtle as shadows, hung back until their call to stage. When they did step forth, they brought with them an authority that filled the room. The entire auditory experience was like staring at a hologram—clean, precise and thrillingly lifelike.

You can create a great stereo system using just a couple of 1961 Tower speakers. But I like upsampling music with Dolby Surround, which expands stereo to use all the speakers in the system while staying surprisingly faithful to the mix. It puts vocals in the center channel and with Eminem's *Music To Be Murdered By - Side B* you can easily keep up with the rap maestro's complex wordplay.

When *John Wick: Volume 4* played, the Arendals flexed their home theater chops. Arendal's 1961 Height speakers helped paint an audio picture that enveloped me. Guns blast, fists fly, bullets whistle, glass shatters, and Keanu Reeves deadpans his lines and it all sounds exquisite.

In the digital landscape of *Tomb Raider*, played on an Xbox Series X, the game world was no longer confined to the screen. Whether escaping from a cave or exploring a tomb, there were times when the audio illusion of being in that space was convincing. Tons of detail come from the height channels, whether a waterfall, falling rocks, bats flying or wind, the height cues added to the realism, excitement, and suspense. Oh, and unlike a movie you can spin around and hear the entire soundfield shift. When you do that, the cohesiveness of the spatial audio sphere created by the speakers is self-evident.

Sadly Dolby Atmos does not utilize the front wide speakers, so only seven of the nine towers were used, but the illusion of immersion is seamless.

There are not all that many games with native Atmos sound. But on the Xbox Series X you can opt to upmix your favorite game. Mine is *Grand Theft Auto Online*, and I found the Atmos upmix more aurally immersive than the standard surround. Notably when upmixing it does use all the speakers including the wides.

There was only one "bad" thing about using the 1961 Tower for the center: superior sound versus the center. It is fair to say that the tower model outperforms the dedicated center speaker because it boasts a more capable design, featuring a vertical driver array, 2.5-way design, four bass drivers, and a much larger cabinet. And because it is identical to the rest of the speakers.

But make no mistake, the center channel is a great speaker and is a better match for its peers than many center channels that create a sensitivity mismatch. However, its design is meant to be compact (thus, not a larger 3-way), and it even includes built-in slots for wall mounting. And that is a logical decision, because in a lot of installations, it's going to have to fit into a space underneath a TV that will not accommodate a tower speaker.

The "Dolby Atmos 7.1.4 channel check" clip is a tool that exposes imbalances. It plays a voice on each speaker, providing a way to judge if the tonality and volume stay consistent and directional cues are accurately positioned. The 1961s pass with flying colors, perceptually perfect timbre-matching across all speakers unlocks the illusion of a cohesive sound bubble.

The two-minute Atmos clip, "Nature's Fury", is an excellent

showcase. It toggles between Atmos on and off as various scenes unfold, providing an immediate comparison that brings the Arendal's capabilities into sharp focus. With Atmos off, the soundscape is satisfactory, yet when Atmos the Arendal system renders a dynamic, vivid soundscape that is remarkably three-dimensional. Rain seems to pour from above and sounds float around the listener.

CONCLUSION

Arendal 1961 speakers do so many things right it makes me feel guilty that I could not find problems to harp about. But after years of reviewing surround systems I know what to look and listen for, and it's all here in these 1961 speakers. Music, movies, games—the Arendal 1961 doesn't pick favorites. Any good mix is reproduced in all its glory.

The 9.4.4 configuration is unconventional but it worked great in my living space. The compact size and modern, minimalist aesthetic fit in perfectly. My wife was won over by the white cabinets with black drivers but mostly the great sound, and wishes this was in fact our system. We've been together for 30 years, so she's heard as many speakers as I have—we still listen to music together every day.

Cliches often become so because they hold a kernel of truth. In the case of the Arendal 1961 speakers, the overused 'sounds amazingly good' isn't just a worn-out phrase—it's a factual statement. You can tell there's a thoughtful design process behind these speakers. Every component and design element shows careful deliberation. But the real proof is in the performance, both measured and experienced—the system is nothing short of astonishing.

The Verdict

A perfect match for a flagship AVR, the 1961 9.4.4 system from Arendal performs great and looks fantastic..

CINEMATIC SPOTLIGHT

How Rob Hahn's Life Work and "The Hahn Theater" Inspired his Kaleidescape Filmmaker Spotlight

BY MARK HENNINGER

ROB HAHN is an American film director of photography and a name you should be familiar with if you love movies. He worked as cinematographer for acclaimed director Frank Oz on *The Stepford Wives*, *The Score*, and *In & Out*.

Working as a camera operator for Academy Award-winning cinematographers Conrad Hall (*American Beauty*) and Owen Roizman (*The Exorcist*) influenced Rob's style. With a keen eye and love for exceptional sound and projection—and with help from Keith Yates Design—he built The Hahn Theater which I named Home Theater of the Decade in 2019.

In this exclusive interview, we discuss Rob Hahn's motivation to build The Hahn Theater and get detailed insights into his career, which inspired his Kaleidescape Filmmaker Spotlight—a new series of movie collections that focuses on the featured filmmakers by compiling their favorite films, other films and filmmakers that inspired their work, and some of their favorite demo movies.

S&V: Tell us about your inspiration for The Hahn Theater, the specific capabilities you wanted and why quality matters?

Rob Hahn: In 2019, my theater was chosen as the Home Theater of the Decade by AVS Forum. However, the journey of designing and building The Hahn Theater started in 1962, when I was 10 years old.

I saw *Lawrence of Arabia* when it opened on a huge screen in 70mm, most likely a print from the original negative. The projection was perfect: bright bulb and razor sharp. I remember the sequence where Lawrence went back into the hot desert to retrieve a man who had been left behind. It was very tense and full of suspense but the shot that made the most impression on me was an extremely wide angle of the vast desert, where right in the middle of the frame, I thought I saw a very tiny black dot. Wait, is that the man we're looking for? Couldn't be, but maybe? It mirrored what Lawrence was thinking too—the audience became Lawrence of Arabia.

The only way this shot could have worked is with perfect projection. If the projector was slightly out of focus, then the shot wouldn't have provided the storyline David Lean wanted: to make you (& Lawrence) think you might be seeing a dot, a dot that might be a man.

That experience started my lifelong passion to see films projected as perfectly as possible. Why? Because presentation matters, not only for the visceral pleasure of seeing images shown properly, but also because it affects storytelling. That one shot was seared in my brain forever, because the perfect projection actually helped tell the story the Director was trying to tell.

However, over the years, I have been continuously disappointed. Every time I enter a theater, I never know what I'm going to get. Will it be sharp? Is the bulb too dim? Is it properly framed? Is the sound so loud it will hurt my ears? Is it too low so I won't be able to understand the dialog? These issues really hit home for me when I started shooting my own movies as Director of Photography. You work so hard for many months on every little detail, only to find when

1) Baffle screen wall showing JBL M2s and 12 Ubersubs.

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your work is presented, the bulb is dark, or the projector is slightly out of focus. People might say, "Oh it's fine" but I contend that subconsciously, a subpar showing (even if it's subtle) affects the entire experience negatively.

Don't get me wrong, there are many fantastic theaters in the world—but it's hit and miss. You never know until the film starts if there will be any issues.

S&V: Can you share a personal experience that inspired The Hahn Theater related to some of the movies you chose for the "Spotlight" collection?

Rob Hahn: When I shot *In & Out* we had the premiere at the Paramount Theater on the Paramount lot, a huge event. I was sitting on the right side, in the middle of the row. Those days we used actual film projection using reels, so when the 5th reel came on, I was horrified to see that it was out of focus! Surely the projectionist would notice and fix it! Nope. I had to sit there and watch my work like that—embarrassing.

Years later, we had another premiere in the same theater of a film I shot starring Marlon Brando, Robert De Niro & Edward Norton and directed by Frank Oz called *The Score*. My mentor Conrad Hall (*Butch Cassidy and the Sundance Kid*), who I had interned with on *Marathon Man* and was his camera operator on *Searching for Bobby Fischer*, sat next to me. I was so nervous to hear what he'd think of my work (and very nervous about the projection). I was determined not to let bad projection ruin the experience, again. So, this time I procured my seat in the aisle, in the balcony, just steps away from a door that led to the projection booth.

Sure enough, when they switched to the 2nd reel, it was out of focus! This time, I jumped up and went into the booth and gently mentioned the issue. They actually let me focus the projector myself. The rest of the evening went without a hitch and at the end, Conrad said with a big smile: "This looks like my stuff." Humbling to say the least.

2) Hahn Theater under construction. 3) View from the left rear corner of the theater. 4) Rob meters Nicole Kidman. 5) Rob Hahn & Kevin Kline pointing. 6) Marlon Brando, Robert De Niro and Edward Norton in front of a giant window in a complex backlit scene from The Score 7) Rack room cable management 8) Racks of Kaleidescape servers

So, all these experiences led me to my desire to build my own theater, where I could completely control the experience.

S&V: What was your vision when creating the optimal space for viewing movies?

Rob Hahn: It felt like I was on a mission. I can't tell you how many times people have said to me "I watched *2001* on the plane." Or "I watched *Close Encounters* on my phone." These films were meant to be seen on a large screen with fantastic sound. I wanted to build such a theater so I could turn people on to these great films and project them perfectly, in a venue that showcased the experience the filmmakers intended when they made the films.

What did I imagine? A room that was completely dark with no distractions. A large screen with controllable variable image size (to accommodate all the various aspect ratios). Perfect projection (razor sharp of course). Excellent dialog intelligibility. Extremely powerful audio with ground-breaking bass response & immersive sound where no seat is compromised, but also no listener fatigue—You wouldn't feel as if you'd been assaulted after the film is over.

The problem was I had to wait until the technology had improved enough so that I could actually achieve what I was imagining.

S&V: The list of your favorite 25 movies in the spotlight series are eclectic so you must have had specific technical criteria for The Hahn Theater that would meet your quality presentation expectations?

Ron Hahn: When I felt that the technology caught up, I started my research. I visited many home theaters around the country from members of the AVS Forum who were kind enough to invite me into their homes. I pummeled them with questions. How large is your screen? How high is the bottom of the screen from the floor? Why do you have a platform? How do you deal with reflections? How many rows of seats? Any issues with viewer angles? Does the HVAC system create any noise and if not, how did you accomplish that?

I also asked how they chose their design and who helped them develop

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it (and who ultimately built their theater). What mistakes did you make and what would you do differently if you could do it all over again?
Once I codified all the answers, my focus turned to the equipment.

The existence of Kaleidescape managing my source material was really the catalyst for me to accelerate the whole project. When I saw that you could have movies copied bit for bit from a Blu-Ray disc to a server and displayed in an easy to use interface, quickly accessible by playing the film directly off a hard disc, bypassing the FBI messages and disc menus, that became the impetus to start my theater, because I knew the technology had finally caught up with my imagination.

As far as the projector, I knew it was the easiest piece of equipment to change. I settled on the Sony VPL-VW5000ES (later upgrading to the Sony VPL-GTZ380). The more important process in building my theater was getting the room right. You do that upfront, you can mix and match equipment as technologies improve.

Now I needed to find a collaborator—enter Keith Yates of KYD and Geoff Franklin of The Projection Room. When I interviewed them, we immediately hit it off and they understood what I wanted and had the technical knowledge to deliver. I explained that my main desire was to build a theater whose environment created a visceral connection to the stories unfurling on the screen, where the experience of a great movie isn't marred by any distractions.

Keith and I traveled to different venues across the country, auditioning speakers for my three main sources behind my Stewart Filmscreen acoustically transparent 19' screen. I used Spielberg's *War of the Worlds* to test high frequency response. There's a scene where a car is catapulted out of a hole, landing on another car. The high frequency energy when they collide is extremely loud and can tell you a lot about the response of the speaker you're auditioning.

The JBL M2's were the only models we heard that didn't create an excruciatingly painful sound, handling the highs with aplomb, with no listener fatigue. I was sold. Of course, the low frequency energy in this film is legendary and the 22 subwoofers in my theater (including 14 UberSubs) create such an intense experience, they make the film truly terrifying, as was intended.

S&V: What was your approach to ensuring proper acoustics, sound design and mix authenticity?

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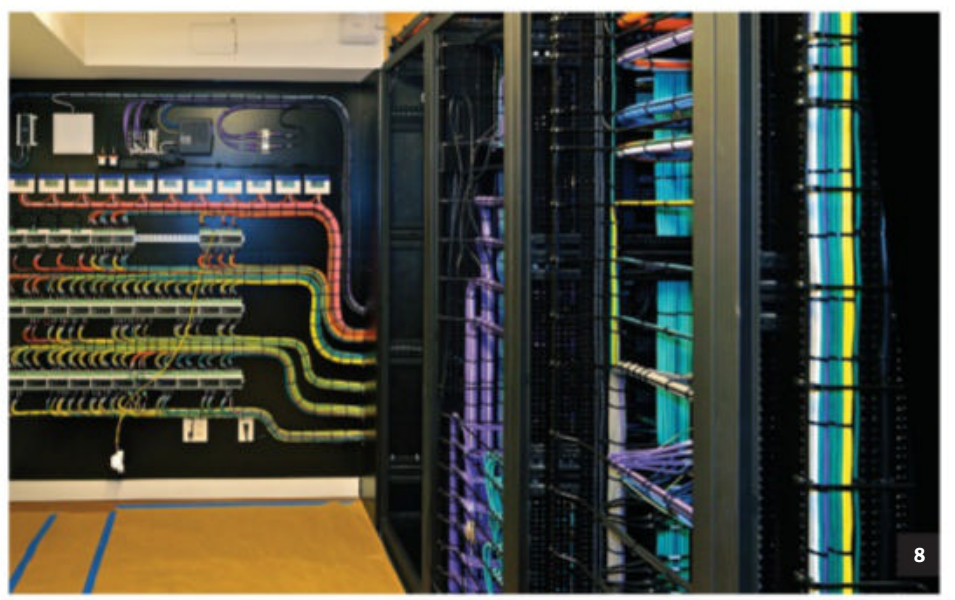

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9-10) The finished projection room
11) Subwoofers ready for installation
12) View from the screen towards the seats

Rob Hahn: The story of my theater build can be found on the AVS Forum. It's too detailed to go into here; there are so many details. However, when we finished, I wanted to find certain films that would show off the theater, not just visually and aurally, but also emotionally—to let people experience what happens when a great film is presented properly and to show how much more powerful the experience is when the room is tuned perfectly. *War of the Worlds* is certainly one of those films. But there are others, of course.

I have over 45 speakers spread out in my theater, including in the ceiling and because it has a stunning Atmos soundtrack, a beautiful picture, and compelling story, I find *Gravity* is also perfect for demoing purposes.

In the beginning of the film, you hear very faint voices from mission control communicating with the astronauts while in space. The audio moves across the ceiling in an almost holographic manner. It's extremely quiet and very subtle, so much so that when some people hear it, they think they're listening to voices outside the theater (and don't have the heart to tell me my theater isn't as airtight as I made it out to be).

Then they realize the sounds are from the film. This is important because it means whenever you, as a viewer, hear any sound, you know it has to be coming from the movie and that subconsciously increases the immersive experience.

S&V: Have you had any actors express their excitement about watching a film in your theater?

Rob Hahn: In 2019, we were able to get Keir Dullea, the lead actor on *2001: A Space Odyssey*, to attend a screening of the film in my theater as a benefit for a local theater (The Westport Country Playhouse). He had just been to Cannes for the Christopher Nolan *2001* 70mm print screening, 50 years after the debut of the film. When our screening was over, he said, "That was the single finest showing of *2001* I've ever seen. And that includes the premiere of the film in 1969!"

Not only was this humbling to hear, but of the 10 people who were at the event, none had ever seen the film on a large screen. It was a revelation to them. This is the reason I built the theater: to expose people to great films in the manner they were intended to be seen, so that films could shine in the best possible light.

S&V: Your wife is actively involved. What did your wife think when she first saw a film in your theater?

Rob Hahn: My wife had never seen *Lawrence of Arabia*. I told her about my experience of seeing it when I was 10 yrs. old and what it meant to me. After screening it for her, she just sat in silence, completely transfixed by the profound experience. Everything contributed to her involvement: the size of the screen, the perfect projection, the delicate but powerful sound, the state-of-the-art source material—cumulatively, it all adds to showcasing masterpieces of film in the proper presentation. And that matters.

Speakers shown to illustrate acoustic transparency. Not actually visible behind the material.

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DENON AVR-X3800H AV RECEIVER REVIEW

Home Theater Ace

RATING

PERFORMANCE ★★★★½

FEATURES ★★★★½

ERGONOMICS ★★★★½

VALUE ★★★★½

By Daniel Kumin

FOR AT least two decades now, designers have been managing to deliver more and more features, power, and audio/video finesse, for fewer and fewer dollars—or at least, no more—with every passing model year. Denon's latest lineup ably illustrates the trend and the one in the spotlight here, the $1700 AVR-X3800H, is going to hit a lot of budget sweet-spots. It's the least costly model in the range with the nine-channels power needed for a full Dolby Atmos, DTS:X, Auro-3D or other-brand object-oriented surround implementation on board.

The X3800H includes nearly every other critical checklist item: HDMI 2.1 on all inputs and outputs; 8K video-capable and 4K up-converting; multi-subwoofer integration and room-correction via top-level Audyssey processing, with Dirac Live as an extra-cost option.

Denon and Marantz are stablemates, and in fact the X3800H is generally similar, not to say identical, to the Marantz Cinema 50 that appeared in this space a couple of issues back. And like the Marantz, the Denon delivers access to both Audyssey XT32 and Dirac Live room/speaker/sub correction systems, with Dirac being a $259/$349 (limited/full-bandwidth) add-on owners can activate online. (The Audyssey vs. Dirac debate will rage until the Internet turns to pixel-dust: I've achieved excellent, and at the end of the day functionally very similar, results from both systems, though they use different geek-level DSPs to get there, undertake essentially the same measurement and equalization processes.)

Another commonality is participation in the Marantz/Denon HEOS streaming/multiroom ecosystem, which we'll revisit briefly a bit further along.

The Denon's key-feature list is, as far as I could squint,

identical to the Marantz's: Dolby Atmos and DTS:X object-based surround modes, of course, plus IMAX Enhanced, Auro 3D, and Sony's 360 Reality Audio; six HDMI inputs, all with 8k video support and 8K upscaling, compatibility with all major HDR flavors including Dolby Vision and HDR10+, and video-game-friendly modes like ALLM and VRR; full participation in Marantz/Denon's HEOS multi-room streaming ecosystem, and voice-assistant integration with Google Assistant, Amazon Alexa, and Apple HomePod gizmos — and, for all I know, Homeland Security (just kidding). There's more, of course: let your fingers do the browsing.

Denon is sticking with the classic AV receiver layout: two big knobs, and a row of larger-than-many keys for key modes and selectors. Thankfully, there's no drop-down door with a million tiny, unreadably labeled push buttons behind it (did anybody actually favor these?); we have on-screen displays and remote controllers to handle those functionalities instead. The central, front-panel display is un-fancy, and unchanged for several generations now, but reasonably readable, as are Denon's somewhat larger, but still low-contrast gold-on-black panel-graphics.

SETUP

The X3800H's physical setup required nothing more than the usual plugging of HDMI and sub cables, and correctly identifying and connecting nine cables from my 5.1.4-channel, Atmos-configured, mongrel — err, carefully curated — speaker array. (With a total of five different brands across front, center, surround, height, and sub, it's living proof you don't need a brand-matched layout if you know what you're doing. So says I.) The next order of business was to run the Audyssey XT32 setup and calibration/correction routine, an easy, self-prompting 15 minutes, with familiar results of improved bass tightness and definition, and midrange focus.

The Dirac Live calibration and correction option is, as mentioned, an extra-cost download. I did not add it to the Denon's setup, but DL has been amply covered in these pages in the past year or so. Audyssey correctly ID'd, balanced, and crossed-over my mixed-breed speaker layout with almost perfectly correct results. The sole exception was the sub level, which it set nearly 10 dB too high. This has been a very common mistake made in my system by many different auto-cal/EQ systems over the years. Interestingly, the near-clone Marantz Cinema 50 did not make it, though why this was the case I have no idea: quite possibly just run-to-run and/or mic placement variance.

One other setup option worthy of note is that the X3800H can direct some, or all, of its nine main audio channels to preamplifier outputs. Importantly, the channels so directed "shut off" their respective power amp circuits, eliminating any chance of degradation of the preamp-level signal due to power-amp clipping or power-supply strain. This is a realistic possibility because the external amp probably won't have the same gain structure as the on-board ones. Consequently, an outboard amp could easily be driven to full power long after the point at which the receiver would have been overdriven.

This would starve the preamp circuits of supply voltage, inducing distortion in them and is a demonstrable phenomenon. In fact, this feature gives the receiver the unavowed superpower of transforming itself into a pretty full-featured AV preamp/processor, at a very attractive price, for those who need or at least want more or "different" power via outboard power amps. I suspect that more than a few x3800H sales will go to buyers with just such intentions.

I nearly always perform most of my auditioning with room correction disabled, since every room and system are different and I want to eliminate as many variables as I can. That said, I do retain two narrow filters (implemented in Roon software's DSP) that mitigate my room's two strongest modes, which I feel helps reveal the subject component's sound, if any.

All my auditions indicated that this is a highly competent AV receiver. First order of business: "audiophile" auditions of two-channel recordings via the Denon's subwoofer-less "Direct" mode, showed the receiver to have plenty of nut to drive my fairly low-sensitivity stand-mount 3-ways to all the level I would ever ask. A long-time favorite reference track for this sort of issue is Lyle Lovett's live, "large-band" rendition of "Here I Am." Beautifully recorded (like most all of Lovett's opus), this punched in with totally believable dynamics and clean, sharply defined vocals and horn lines, without any sign of exaggerated sibilance or grit, even at near-venue levels cresting 100 dB SPL on peaks. The same clarity and unforced definition was evident on every high-production-value track I tried; as a stereo amp, the X3800H passed muster with ease.

At a Glance

- \+ Audyssey XT32 room correction, with extra-cost Dirac Live option
- \+ 9 powered channels enable a full Atmos/DTS:X layout
- \+ 4 discrete subwoofer outputs to integrate and EQ multiple subs
- \+ Handy global-preset feature
- − HEOS app required for streaming music services
- − Non-backlit remote

Denon AVR-X3800H

Price: $1700

www.denon.com

LISTENING

Dolby Atmos music is fast gaining both popularity and street cred amongst 'philes, but finding and streaming high quality classical Atmos, absent Apple Classical (which I don't yet have), can be challenging. Tidal has a modest catalog, but the Atmos mixes did not appear to make the trip, via AirPlay, from either my iPad 5/mini, or from Denon's HEOS app, nor from my admittedly old-ish Roku 4k+ Express. Against expectation, though, the Tidal app on my years-old Sony A8H OLED TV worked, allowing me to sample a goodly range of Atmos productions. (And as a parenthesis, I'm on the bandwagon. There are some impressive Atmos classical

productions out there.)

One — a snippet of the wonderful Stravinsky violin concerto (Harmonia Mundi, Isabelle Strauss) — stood out for the naturalness of tonalities, hall-sound, and spatial localization. The X3800H served it royally, delivering about as close to a you-are-there listening experience as you are likely to encounter. This is a more organic, convincing sense of stage height and location, and of hall acoustics and position, than even the best DSP-surround "concert halls." The X3800H helps prove that, carefully set up right and fed the right program, more channels really are better.

Of course, film sound is the reason most of us shop for AVRs in the first place. 2013's *Gravity* is an Atmos waypost and an outstanding production top to bottom. The opening minutes cleverly exploit spatial location to elevate dramatic effect, and via the Denon the Atmos mix expertly directed George Clooney's voice to different quadrants, laying spatial groundwork for the drama to come. (I'll overlook the fact that in the vacuum of space, there is of course no sound at all — any voices would be heard only in the perceivers' headsets — presumably in mono. But let's file this one under "willing suspension of disbelief.")

The Denon shares the Marantz Cinema 50's ability to integrate as many as four subwoofers in its Audyssey room-calibration setup, via XT32's Sub EQ HT. I don't have four subs, but I do have two on hand, and I confirmed that the X3800H behaved identically: it got crossovers correct, but not levels, which were a bit high to my ear as is almost always the case with auto-setups, and delivered a subtle improvement in response smoothness/tightness through the crossover octave. Your mileage will of course vary, since every room and all subs are different, but this is a valuable tool for any implementing multiple woofers, to subdue at least a bit the influence of room modes.

THE HANDS-ON STUFF

For the most part, the X3800H proved a pleasure to use. On-screen menus are straightforward, with a useful "info" screen that pops up all the audio and video format info you'd likely want to see. The supplied remote is similarly friendly, though the lack of key lighting counts as a demerit. (The sister-model Marantz Cinema 50's remote does have such lighting—as well it should for the receiver's considerably higher price.)

Again in common with the Marantz, the Denon's streaming ability comes courtesy of the HEOS app running on an iOS or Android device, so without one or the other your options are limited. That said, the Denon responded correctly to my "native" streaming apps Roon, Qobuz, and Tidal, though limited to AirPlay's maximum 48/24 resolution. (Surprisingly, the Denon does not have a built-in Chromecast.)

HEOS has been covered many times in *S&V*. My take is that it is a serviceable and reasonably elegant streaming quarterback for the most popular services. Denon's AVR iOS app (there's an Android version as well) delivered full receiver control, albeit with a somewhat slow response time, at least in my system.

Denon's Smart Select feature, which twins the Marantz's gizmo of the same name, lets you set four preset combos of all the important audio and video parameters: surround mode, Audyssey EQ, HDMI video output mode, and even individual channel-level trims, which I count as a particularly valuable one-touch recall for switching between multichannel music and movies. This is one "extra" I'd definitely use every day: I'd set one Smart Select tweaked for surround music, one for movies, and one for quotidian TV watching, with Audyssey Volume leveling the Denon's dialog-enhance feature—both enabled for casual viewing at any level with max intelligibility. This boosts both overall center level, and vocal-range EQ a bit.

In sum, Denon's AVR-X3800H is a thoroughly competent, fully featured AV receiver for any modern nine-speaker system — or fewer, but why would you want fewer? It's eminently usable, clean and dynamic, and adequately powerful for any system except a truly power-hungry speaker suite or a setup in an unusually large space. The question begging to be answered at the bottom of the page is how this model compares to its Marantz stablemate.

The Marantz brand offers a few more watts of power, a slightly more elegant look, and a few extra pounds in weight, potentially due to the power transformer's heft. It might also offer a decibel or so of better dynamic headroom. Apart from the remote control backlighting lighting issue mentioned above, the two models are nearly identical. Considering these factors, the Denon's value advantage seems clear.

Specs

POWER OUTPUT: 105 watts per channel (20 Hz-20 kHz, 0.08% THD, 2 ch. driven at 8Ω
DIMENSIONS (WxHxD, Inches): 17.1 x 6.6 x 14.9 in.
WEIGHT (Pounds): 27.6 lb.
AUDIO INPUTS: 6x HDMI (plus eARC), 2 coax, 2 optical digital, 1 USB (front); 5 analog stereo line unbal.,1 MM phono.
AUDIO OUTPUTS: 11x speaker (9 active simultaneously: up to 4 assignable to zones); 11.4-channel unbal. preamp outputs (inc. Height-2/Zone-3, 4 subwoofer outputs). 2 source/2 zone system, either via zone HDMI output, zone 2 pre-out or powered zone 2.
VIDEO INPUTS: 6x HDMI
VIDEO OUTPUTS: 3x HDMI (1 eARC, 1 zone)
WIRELESS: Bluetooth 4.2 A2DP/AVRCP; WiFi/Airplay2
ADDITIONAL: FM 75Ω "F" antenna; AM-antenna push-terminals; Ethernet (network, control, streaming); RS-232 (control), 1x 12v-trigger; remote in/out.

The Verdict

All the important features, enough channels for Atmos/X, and enough watts for a large majority of systems, all with top-shelf sonics, and all for a reasonable price.

SAMSUNG OLED G9 240 HZ 49" ULTRA-WIDE MONITOR

SOUND & VISION TOP PICK

QD-OLED FTW

By Mark Henninger

RATING

PERFORMANCE ★★★★★

FEATURES ★★★★★

ERGONOMICS ★★★★★

VALUE ★★★½☆

THE SAMSUNG OLED G95SC is a genuine "world's first" for a gaming monitor with its 240 Hz, 49-inch QD-OLED screen. Its ultra-thin profile and light weight, despite its epic dimensions, make it surprisingly easy to assemble and adjust. The $2,200 MSRP may be high but is a reflection of the cutting-edge technology found within.

This monitor is a bit of a break from the TV and projector reviews that we usually feature in the magazine. It was included due to its unique and ground-breaking technology.

Over a decade ago, gaming surpassed Hollywood and the music industry combined in size. Today, the gap is even larger: gaming generates more than twice, and perhaps even triple, the combined revenue of movies and music. So it's no surprise we're seeing significant innovation in the gaming monitor market; this Samsung monitor epitomizes the trend.

THE G95SC offers fans of racing videogames and simulators an enhanced immersive perspective with its 32:9 aspect ratio.

This trend is only accelerating. Gaming has now evolved into a spectator sport with professionals relying on hyperfast, ultra-performance gear to maintain their competitive edge. This monitor is a ticket into that world, no doubt. However, it should not be discounted for other applications,

including photo and video editing. If you appreciate high-quality products and are willing to be an early adopter, this is arguably the finest ultrawide monitor for your desk.

FEATURES AND SPECIFICATIONS

The monitor's native resolution is Dual QHD (5120 x 1440 pixels). The screen features an 1800R curve, which is less extreme as last year's G9 that had a 1000R curve. The maximum refresh rate of 240 Hz delivers some of the most fluid and ultra-detailed graphics seen in any context.

This Samsung benefits greatly from a "beyond 4K" horizontal resolution that renders text and graphics with the sort of ultra-high definition you find in modern smartphone screens. Even sitting up close, you can't make out individual pixels. The monitor also features High Dynamic Range (HDR) that leverages OLED's 'infinite' contrast and a wide color gamut covering the DCI/P3 space, which is commonly used for most HDR mastering. It is compatible with the ubiquitous HDR10 standard but it also supports HDR10+ Gaming that delivers extra metadata to the monitor to make getting an accurate image a breeze while supporting VRR (variable refresh rate) and ALL (auto low latency) as well as "automatic" HDR calibration.

This monitor has multiple inputs, a full size and a micro-HDMI port plus a DisplayPort 1.4 input. It also supports Wireless Display. The G95SC ships with a Samsung programmable smart remote and offers an incredibly deep menu system offering plenty of customization. Its smart features include streaming support for cloud gaming via the Samsung Gaming Hub, and the ability to pair gaming controllers. Additionally, it offers app-based streaming of all popular services.

And now, the answer to that eternal all-important question: yes, the monitor supports Apple AirPlay.

Samsung equips the G95SC with its Neo Quantum Processor Pro. It is tasked with enhancing video quality in near real time for an optimized picture on a monitor that touts a 0.03 millisecond response time (when operating at 240 hertz).

This is a factory-calibrated monitor so it is remarkably accurate right out of the box. Samsung includes a calibration report with each unit. The monitor offers many game-specific settings and adjustments, such as a virtual aim point.

The monitor itself is made of aluminum and plastic, while the base is pure aluminum. The choice of materials keeps the weight low and gives the monitor an understated modern look. As expected in a gaming monitor, it features RGB LED lighting—Samsung's Core Lighting—around the ring where the stand meets the screen. This not only illuminates the wall behind the monitor but also brightens the desktop area around it.

SETUP

In spite of its large size, I was surprised by the light weight and compact dimensions of the box the G95SC came in. I realized the extra bulk of packaging from the previous G9 monitors I reviewed was due to their more pronounced curved screen.

Credit where it's due: this monitor's stand represents a remarkable engineering achievement. It makes adjustment extremely easy; it doesn't take a lot of force to change the height and the angle of tilt. And yet it stays put once adjusted. The design also cleanly guides connected cables to the rear of the stand so that you don't see them at all from the front as long as they are routed behind a desk.

During initial setup, the owner will be prompted to complete the wireless connection wizard for an easy, hassle-free online connection. Using a smartphone can expedite the process, but you can also do it with the remote control.

After setup, you'll land in the workspace, where Samsung offers guides for connecting a Windows PC, Mac, or a phone using Samsung DeX. Samsung included built-in far-field mics for interaction with voice assistants as well as when you're using it for video conferencing, or to pick up your voice when you are gaming.

In terms of work/home office productivity, the monitor comes equipped with apps like Google Meet and Microsoft 365. The monitor also features a complete online manual, which proves immensely helpful given its myriad capabilities, including the ability to wirelessly connect to your PC and display the desktop.

The available color modes are Standard, Dynamic, Movie, Graphic, Entertain, and Eco. Graphic and Entertain are discrete modes that show up when the monitor recognizes it is attached to a PC. Entertain clearly aims to be as bright as possible. Graphic looks fine, but I found it necessary to tweak the PC-specific mode settings to get the same hyper-accurate look as Movie. But there is another way, a trick I also use with Samsung's TVs: you can just tell the monitor the PC is actually a game console, at which point it'll

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SAMSUNG OLED G9 240 HZ 49" ULTRA-WIDE MONITOR

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If you seek the monitor's best color performance, opt for the Movie mode. As a factory-calibrated monitor, it delivers practically spot-on 6500K color temperature and perfect Gamma tracking, with multiple options including BT.1886. Whether you're into gaming, editing videos, or color correcting photos, this monitor's factory calibration gives you an excellent starting point.

The G95SC was tested as the primary display for an RTX 3080Ti-equipped 12-core PC. I used it as a desktop display briefly, and the only issue I encountered was the fear of becoming too accustomed to it, knowing that I eventually had to return the monitor. Long story short, I would definitely use this as my daily driver for creative tasks. But gaming is its purpose and the dual QHD hits the performance sweet spot with the PC rig used in this review. A lot of my time with the monitor was spent using it with a racing sim cockpit (its ultra-wide curved screen makes an ideal display for driving games). Still, when used on a desk, the milder 1800R curve looks and feels natural and does not take up a lot of space.

The PC delivers the full resolution (7.37 megapixels) in SDR or HDR at extremely high frame rates depending on game settings. I made the connection using an 8K compatible fiber-optic HDMI cable, partly because it supports the 30 foot long run from my sim racing cockpit to PC. I had zero issues with the HDMI connection for the duration of the review. Samsung does supply a DisplayPort cable as well as a HDMI to Micro HDMI cable.

The G95SC can effectively replace a dual-monitor desktop setup, if you choose to use it that way. It boasts superior aesthetics, ease of adjustment, and offers flexibility as a single cohesive screen or as two separate monitors using individual HDMI inputs. It's really like having three monitors in one.

One aspect I didn't explore with this monitor was cloud gaming, as I currently lack interest in signing up for and streaming video games. I only went as far as pairing one of my Xbox controllers and ensuring that that actually works.

HANDS-ON

The extremely high contrast combined with brilliant color rendition offered by the Samsung G95SC is crucial to the overall visual experience. Its quality is immediately obvious in the three-dimensionality of the hyper-detailed graphics.

It doesn't take much time with the G95SC to conclude that QD-OLED is the best display technology for this application. Graphics displayed on this monitor showcase the contrast, color, and sharpness characteristic of OLED. But unlike conventional OLED TVs, with QD-OLED there is no perceptible color shift or loss of contrast when viewed off-axis. Measure brightness peaked at around 300 nits, which is all Samsung promises to begin with.

Ease of use is a pleasant surprise! Samsung's menu system mimics its 2023 TVs and is logically laid out. You are usually only a couple button presses away from adjusting key features and settings like image mode, input, multi-view, picture settings, etc. The Game Bar conveniently displays key gaming-specific settings. It's easily accessible with the remote, eliminating the need to fumble with hard-to-find hidden controls.

Specs

DIMENSIONS (WxHxD, inches): 47 x 20.8 x 9.3 (with stand)
WEIGHT (pounds): 28.4 (with stand)
VIDEO INPUTS: 1X HDMI 2.1, 1X micro-HDMI 2.1, 1X DisplayPort 1.4
USB: 4X USB 3.0
RESOLUTION: 5,120 x 1,440 pixels
SCREEN CURVATURE: 1800R
MAXIMUM REFRESH RATE: 240 Hz

The important thing to know about ultra-wide aspect ratio gaming monitors is that they do not crop the top and the bottom to fill the screen. Instead, what you get is an expanded field of view. The 32:9 monitor offers an ultra-wide perspective, essentially twice as wide as a standard 16:9 monitor. With such an all-encompassing view, first-person perspectives take on a "you are there" quality that puts you directly into the action. In car racing and first-person games, the monitor's perspective from the optimal position mirrors our natural vision, producing a fairly immersive visual experience..

Unfortunately the PlayStation 5 does not support ultra-wide aspect ratios or else I would have used it to play *Gran Turismo 7* on the G95SC. On PC, my usual adventures in gaming consist of *Grand Theft Auto 5 Online* sessions, *Microsoft Flight Simulator* and *Forza Horizon 5*, the latter running the Hot Wheels expansion pack.

The performance with the PC was exceptionally good. With the monitor running in 240 Hz mode the latency in games is effectively non-existent. I found car racing with the racing sim rig to be super responsive, with no awkward disconnect between what you see on the screen and your actions. You need that real-time feedback for the simulation to feel realistic.

For me, video game car racing started with the Atari 2600 and the incredibly low resolution monochromatic game *Night Driver*. Then came *Pole Position*, a staple of 1980s video arcades, which offered a 3D perspective and color graphics. It created an insatiable thirst for ever better graphics and driving physics.

Over the course of four decades driving games evolved into the ultra realistic experiences of today. Experiencing Forza 5 Hot Wheels races on this monitor fulfills a childhood fantasy of playing a driving game with perceptually perfect graphics.

The quality of QD-OLED always impresses, even when simply using this monitor as a single 16:9 display. If you want to hit that high refresh rate, one way to do it is with a powerful PC outputting 16:9 QHD. It may not be fully 4K, but it possesses a visual sharpness that is practically inimitable! The ultra-high definition is the result of the fine dot pitch. This is combined with the extraordinary micro-contrast that OLED emissive pixels achieve. You can also choose this 1440p resolution and enjoy flawless 120 Hz 16:9 output with gaming consoles. Indeed, for fun, you could even have a PS5 and an Xbox Series X connected concurrently and displayed side-by-side on this Samsung monitor.

I used my PS5 to play *Gran Turismo 7* on the G95SC. It is a modern driving sim that's also playable in "arcade" mode. It is packed with incredibly realistic vehicles and scenery. While I wished for the expansive view offered by dual QHD PC graphics, judged strictly on color, contrast

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and perceived resolution, I've *never* seen the game look this good before.

On the productivity side, whether you're into photography, or videography, or creating artwork or 3D models, this monitor gives you an uninterrupted, seamless ultra-wide desktop—unlike a dual-monitor setup. And when you are inside a creative application, you get lots of room for palettes and menus, with space to spare for the content you're working on. In a video editor, it's almost hilarious to see that you can have a timeline that extends that far. Or you can use part of the monitor for a full-sized preview.

The fidelity of graphics rendered in SDR is impeccable, and I say that as a (former) professional photographer who depends on a display's accuracy to represent the final look of the image. You can do critical color work on this monitor and feel confident of the result. I used it with Photoshop to develop RAW photos and you can finesse the shadow and highlight recovery to get the exact look you seek. And even here, the monitor's low latency proved a big plus; it improved the sense of accuracy when making fine selections.

When showing HDR, about the only thing one could wish for out of the G95SC is a higher peak brightness that's more in line with Samsung's QD-OLED TVs. But the truth is the contrast delivers the "pop" you expect from HDR nonetheless. And the overall brightness is more than enough to look fantastic in a sunlit room. It is a top-tier tool for color accuracy because of the intrinsic qualities of quantum dot OLED that uses RGB pixels and is highly linear in nature.

Right out of the box, this monitor is calibrated and ready for mission-critical work or play. If you choose to further calibrate this monitor, which does have Samsung's advanced calibration controls built-in, you can achieve and maintain exquisite reference-level accuracy. Although this monitor features built-in audio with virtual surround, I maintain that, as with any stationary display, an investment in an external audio system would greatly enhance the overall experience.

CONCLUSION

A 32:9 aspect ratio monitor for $2,200 may at first seem niche and pricey. But the G95SC is a specialized device and while it will strongly appeal to hardcore gamers it is also a dream machine for creative professionals. Anyone who sees a benefit from an ultra-wide perspective and blazing fast frame rates will love this monitor. There's simply no other monitor that gives you such a wide aspect ratio, quantum dot OLED image quality, support for 240 Hz, and all at such an audacious screen size.

The superior gaming visuals delivered by this cutting-edge gaming monitor are unforgettable. It will spoil you in no time flat. All the elements needed for great gaming are there in cornucopian abundance: color, contrast, resolution, aspect ratio, low input lag, wide viewing angles, excellent adjustability, a remote control, and the frame rate.

Before QD-OLED, Samsung's G95SC Galaxy monitors were comparatively bulky and had very limited viewing angles, but when set up right they offered similar immersion. As cool as those monitors were, the G95SC raises the bar by outperforming its predecessors despite lighter weight and a much slimmer form factor.

The key thing to note is that this monitor is not only a cutting-edge gaming device but also a productivity tool, qualifying it as a masterpiece of industrial design.

At a Glance

- \+ State-of-the-art graphics
- \+ Great for gaming and productivity
- \+ Statement-making design
- \+ Packed with smart features
- \+ Factory calibrated
- − Pricey
- − Needs a powerful PC for gaming
- − HDR could have brighter highlights

Price: $2200

1 (800) 726-7864

Samsung.com

The Verdict

With its combination of quantum-dot OLED display tech and a 32:9 aspect ratio, 49-inch screen Samsung's latest ultra-wide monitor is a gamer's delight while also serving as a reference-quality productivity tool.

RATINGS
REFERENCE ★★★★★
EXCELLENT ★★★★½
GOOD ★★★★
FAIR ★★★½
POOR ★★½

AVATAR
AVATAR: THE WAY OF WATER

Are we officially in the post-originality era of film? Is everything now based on, inspired by or an homage to something else? When *Avatar* premiered in 2009, critics sussed it as a sci-fi riff on *Dances with Wolves*, an observation which writer/director James Cameron apparently accepted, compliment or not. Here's the thing, though: Does the story even matter here? The script--while certainly clever in places--served its purpose to set up a new generation of visuals effects that utterly dazzled audiences, making *Avatar* the highest-grossing film in history, for a time.

In the 22nd century, humans have set up shop on Pandora, a strange moon far from our over-populated planet, in order to plunder its natural resources. The indigenous people are a race of tall, blue warriors who resist the invaders, and the solution to the rising tensions might be for the Earthlings to blend in by taking the form of the locals. They do this via the use of avatars, custom-grown organic hosts for the team of human emissaries, which includes eager former Marine Jake Sully, doing his part in exchange for a pricey surgery. His involvement, however, grows complicated when he catches feelings for his cerulean mentor, Neytiri, and her clan. Loyalties are tested and violence erupts.

And then of course is the inherent unoriginality of sequels. In *Avatar: The Way of Water,* we jump ahead 13 years and Jake and Neytiri are raising a family, which crowds the two leads to the background as we focus instead on a gosh-will-I-ever-fit-in subplot worthy of the Disney Channel. Despite having been summarily dispatched, a key character returns in a somewhat hokey fashion to help further the nefarious goal of Pandoran exploitation by the humans. Along the way, Cameron also revisits plenty of tried-and-true nuggets culled from his own canon. Even though it's a "more of the same" variety follow-up, the visuals have been kicked up a big notch: Oscar winners both, these movies are richly deserving of all their accolades, and they're ideal fodder for Ultra HD Blu-ray.

The Way of Water's languorous beauty shots might lead us to sigh out loud with their insane levels of native 4K detail and vibrant hues, particularly blues and greens. The composition is at times hypnotic, layers of sunshine breaking through the canopy of trees and drawing the eye. Some scenes combining live action with CGI can take on a peculiar appearance, but by now our brains are likely used to the sensation.

The first *Avatar* is making its 4K disc debut as well, elevated to modern standards for its recent theatrical re-release utilizing AI to up-rez the image from its 2K source. The image is sharper and more finely textured with only minor video noise and excellent highlights plus improved shadow detail: There's no mistaking this for the old HD Blu-ray releases. Limited by its 14-year-old technology, it's missing just a bit of *Water*'s sparkle, making it a close second. Both arrive on triple-layer 100GB discs.

Way of Water was produced in native 3D and Mr. Cameron has flexed his muscle to give fans a Blu-ray 3D release, something of a rarity these days. Unlike 2019's Cameron-produced *Alita: Battle Angel*, *Water* 3D is a separate purchase, spread across two discs for superior quality.

The Dolby Atmos soundtracks offer everything we could ask for from a big event film: pleasing depth, a wide active soundstage, plenty of low end, as well as superb reproduction of quieter, more emotional, dialogue-driven scenes. The overhead channels provide outstanding immersion in this fantastical world, the jungle, the airships and flying beasties. James Horner's musical themes live on in rich fidelity and thumping bass.

All of *Avatar*'s extras reside on its third platter, two new retrospectives plus a truncated sampling of the massive supplements past. *Water* packs well over a dozen featurettes which, despite their limited length, give a deep dive on the movie and its creation. ● **CHRIS CHIARELLA**

Avatar
Avatar: The Way of Water

ULTRA HD 4K BLU-RAY
STUDIO: Fox
HDR FORMAT: HDR10
AUDIO FORMAT: Dolby Atmos with TrueHD 7.1 core
RATING: PG-13
DIRECTOR: James Cameron
STARRING: Sam Worthington, Zoe Saldana, Sigourney Weaver, Stephen Lang

YEAR: 2009
ASPECT RATIO: 1.78:1
LENGTH: 162 mins.

PICTURE ★★★★½
SOUND ★★★★★
EXTRAS ★★★½

YEAR: 2022
ASPECT RATIO: 1.85:1
LENGTH: 193 mins.

PICTURE ★★★★★
SOUND ★★★★★
EXTRAS ★★½

Fox

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JOHN WICK: CHAPTER 4

JOHN WICK: CHAPTER 4 is the latest installment in the popular action film series starring Keanu Reeves in the titular role. This story picks up with John on his way to uncovering a path to finally defeat The High Table, to whom he is beholden for his past choices. But before he can earn his freedom, he must face off against a new enemy with powerful alliances across the globe, turning old friends into foes.

Like its predecessors, *Chapter 4* adheres to the same formula, with a slick style which feels much like a graphic novel brought to life. Truth be told, these aren't films that are truly meant to be about the story, rather they're aimed at adrenaline-fueled action, the type of which die-hard genre fans feed on. As you might expect, the action, choreography and attention to detail used in the gunfight and hand-to-hand exchanges is frenetic and engaging. Chad Stahelski's direction keeps focus on-point without overemphasizing the elements of drama, while interweaving moments that stitch context and action together. I am most decidedly a fan of the John Wick film series, and this installment is every bit as entertaining as its forerunners, which is all that you can ask from any sequel.

John Wick: Chapter 4 was derived from a 4.5K source and rendered from a 4K digital intermediate (DI). This film relies on stylized visuals that employ stark contrast, vivid color and minimal CGI. Compared to the included HD Blu-ray disc, Ultra HD takes it up a notch with an increase in detail and emboldened highlights, both light and dark. Color reproduction is simply gorgeous. Contrast abounds. Close-ups reveal oodles of fine detail and subtle textures. I found the application of high dynamic range to be spot-on. There are a host of sequences that deliver opulent visuals which combine brilliant color and dynamic range.

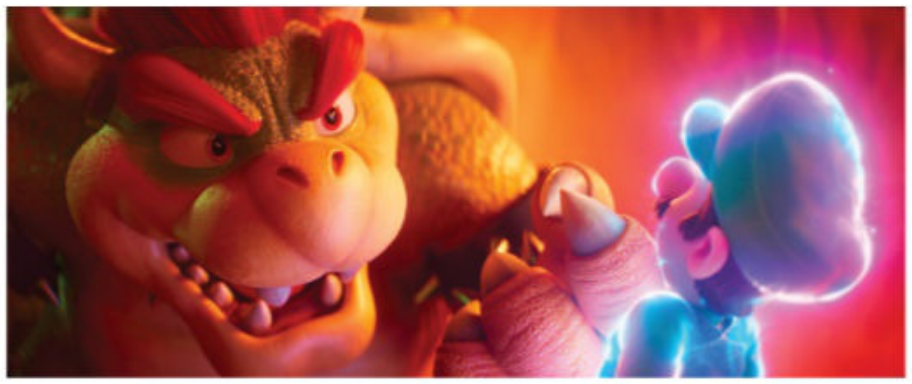
The Dolby Atmos surround track is comprised of a mix of atmospherics and discrete sounds that effectively align with the events unfolding onscreen. When the action ramps up, there are speeding vehicles, nearfield pans and weapon fire that rotate around the soundstage, resulting in a resplendent blend of room-shaking bass, dynamics and enveloping multichannel audio.

Bonus features include ten production featurettes, theatrical trailers, and a new preview of the upcoming series, *The Continental*. A digital copy code rounds out the package. If you enjoy the John Wick films, *John Wick: Chapter 4* offers more of the same — and it looks and sounds fantastic on Ultra HD Blu-ray. ● **RALPH POTTS**

ULTRA HD 4K BLU-RAY
STUDIO: Lionsgate, 2023
ASPECT RATIO: 2.39:1
HDR FORMAT: HDR10, Dolby Vision
AUDIO FORMAT: Dolby Atmos with TrueHD 7.1 core
LENGTH: 169 mins., R
DIRECTOR: Chad Stahelski
STARRING: Keanu Reeves, Donnie Yen, Bill Skarsgård, Ian McShane, Shamier Anderson, Hiroyuki Sanada

PICTURE ★★★★½
SOUND ★★★★½
EXTRAS ★★★½

Lionsgate



THE SUPER MARIO BROS. MOVIE

THE SUPER MARIO BROS. MOVIE is based on the popular '90s video game series and tells the story of a pair of Brooklyn plumbers who also happen to be brothers: brave Mario and the more reserved Luigi. When we meet them, Mario and Luigi are trying to find ways to keep their struggling plumbing business afloat. While exploring the city's sewer system, they stumble across the secret entrance to the Mushroom Kingdom, a magical place where they will discover the adventure of a lifetime. Along the way we'll encounter a host of familiar, lovable characters, all of whom will have to band together to defeat the power-hungry villain, Bowser.

I never seem to grow tired of animated family entertainment and, after hearing positive feedback on this film, I was all in for the chance to review it. It is a wonderfully spun adventure that teems with clever expression, opportune social commentary and resonant messages that speak to the bonds of friendship and brotherly love that hit home without mawkishness. I enjoyed the numerous references to the classic Nintendo game as well as the popular music of its time, both adding depth to the damsel-saving quest. The narrative can be a bit trite and perhaps more than a little corny, but it doesn't strive to be anything more than an amusing romp. I found its slapstick, situational humor and heartwarming sentiment to be delightful. While not among my favorite animated films, I had a good time with *The Super Mario Bros. Movie*.

ULTRA HD 4K BLU-RAY
STUDIO: Universal, 2023
ASPECT RATIO: 2.39:1
HDR FORMAT: HDR10, Dolby Vision
AUDIO FORMAT: Dolby Atmos with TrueHD 7.1 core
LENGTH: 93 mins., PG
DIRECTOR: Aaron Horvath, Michael Jelenic
STARRING: Chris Pratt, Charlie Day, Anya Taylor-Joy, Jack Black, Keegan Michael Key, Seth Rogen, Fred Armisen

PICTURE ★★★★½
SOUND ★★★½
EXTRAS ★★★½

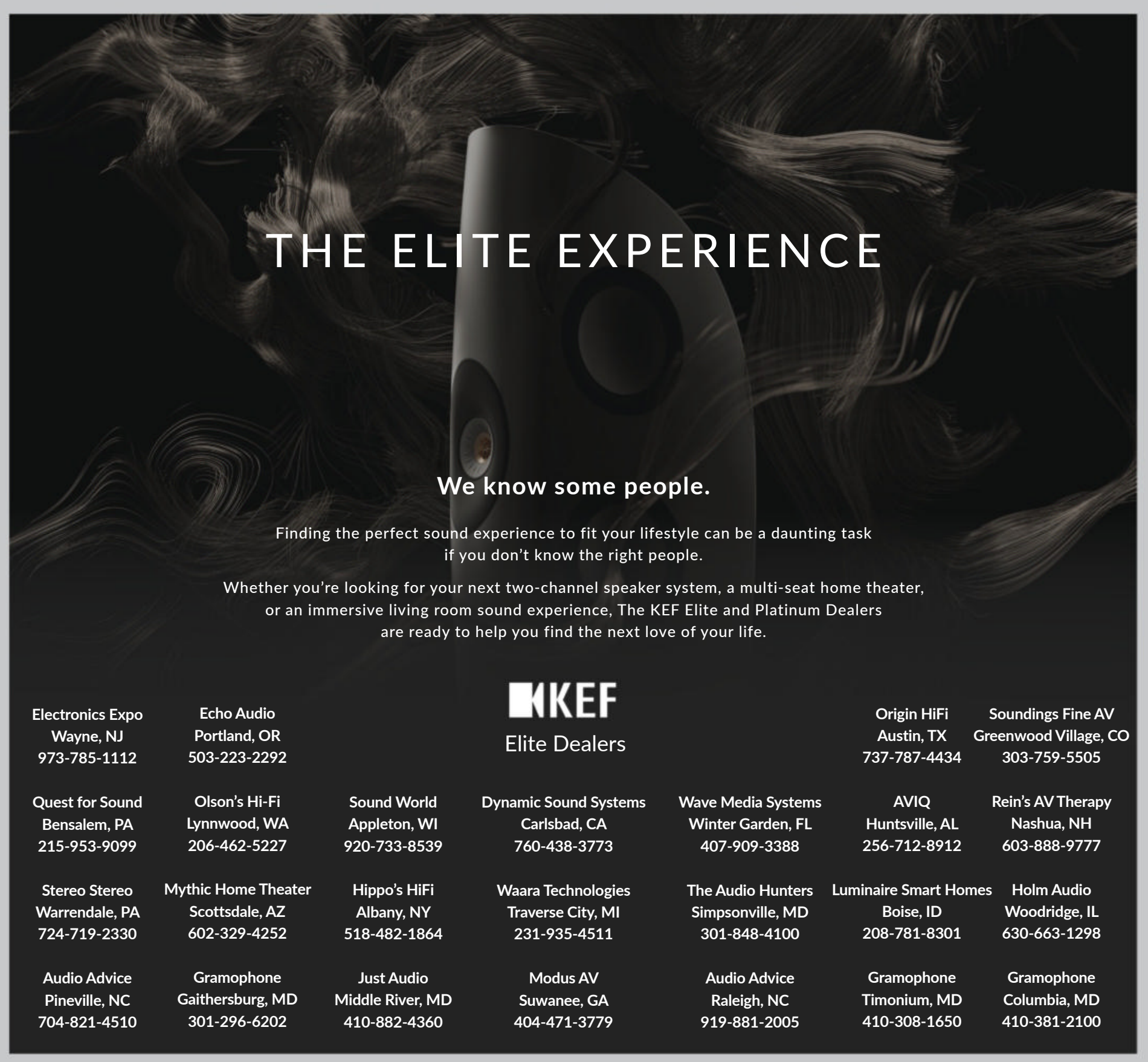
Universal

The differences between the 4K and 1080p versions are appreciable, as there is an increase in fine texture, especially in the physical makeup of the characters and the backgrounds. The image has excellent visual pop via the expanded color gamut and the high dynamic range which draws out the film's varied chromatic palate and use of contrast. Whites are gradational and bright and the monochromatic grays, blues and blacks featured in the sequences with limited lighting are multi-staged and dimensional in appearance.

The Dolby Atmos sound is moderately active with respect to its use of the height channels, which was a bit disappointing. In general, the mix effectively places cues throughout the soundstage. Dynamic range and bass are adequate but underwhelming. I wouldn't regard this a commanding Atmos listening experience, but it gets the job done.

Bonus features include a six-part "making of," cast interviews and a pair of fun featurettes in addition to a sing-along lyric video. An HD Blu-ray disc and a Movies Anywhere digital copy code complete this set. ● **RALPH POTTS**

KEF Listen and believe



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THE LONGEST YARD

SOME SPORTS movies are simply about baseball, boxing, hockey or whatever, while others manage to be about something else, and maybe even something *more*. Such is the case with *The Longest Yard*, which adds layer upon layer of subtext to the game of football until we can't help but feel deeply invested in the final score.

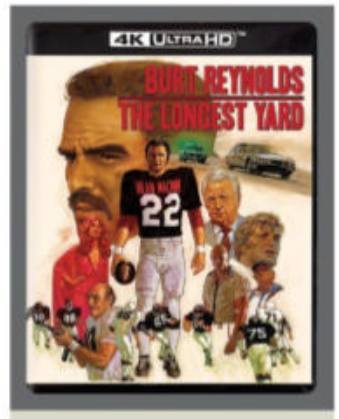
Screen legend Burt Reynolds stars as Crewe, a disgraced former quarterback who's been shrugging his way through life, until he finds himself behind bars with a nasty head guard, a self-important warden and a yard full of inmates who universally resent the hell out of him. He reluctantly agrees to assemble a bunch of his fellow convicts into a ragtag team for an exhibition game against the guards, in exchange for special privileges and early parole. Yet along the way, Crewe discovers a nobility he never had before, giving his men something to fight for and ultimately facing the most difficult choice of his life. Director Robert Aldrich, known for works like *The Dirty Dozen* and *Kiss Me Deadly*, imparts ample humor and a real darkness that further elevate this film as one of the greatest sports dramas of all time.

Kino Lorber Studio Classics has remastered *The Longest Yard* from the original camera negative, and we are treated to well-preserved, natural-looking grain across the 1.85:1 frame. Shadows and darker backgrounds are agreeably resolved, while the unforgiving Georgia sun might set us to sweating on the couch in sympathy. Fine details are maintained as well, including the small imperfections introduced in the split-screen sequences, owing to the additional film processing required, while the texture and weave of suits and uniforms are readily visible. My kind words notwithstanding, this is not a pretty movie nor is it a good choice to show off your system, rather a fine upgrade that allows us to better enjoy a '70s classic.

The DTS-HD Master Audio 2.0 is as clear and dynamic as we could realistically expect, sufficiently conveying the action, whether it's a car chase early in the film, the violent hits on the gridiron, or the roar of the crowd at the climactic game. Dialogue is always dependably legible. Of note, KLSC has opted not to provide Paramount's DVD-era 5.1-channel remix here.

Two terrific commentaries grace the 4K platter, an archival track with Reynolds and producer/co-writer Albert S. Ruddy plus a new one from a pair of critics/Aldrich experts. The commentaries are repeated on the included HD Blu-ray, where we'll also find a couple of worthwhile featurettes with some familiar faces.

● **CHRIS CHIARELLA**



ULTRA HD 4K BLU-RAY
STUDIO: Kino Lorber Studio Classics, 1974
ASPECT RATIO: 1.85:1
HDR FORMAT: Dolby Vision, HDR10
AUDIO FORMAT: DTS-HD Master Audio 2.0
LENGTH: 121 mins., R
DIRECTOR: Robert Aldrich
STARRING: Burt Reynolds, Eddie Albert, Ed Lauter, Michael Conrad, Jim Hampton, Bernadette Peters

PICTURE ★★★★½
SOUND ★★★½
EXTRAS ★★★½

Kino Lorber

SHOWGIRLS

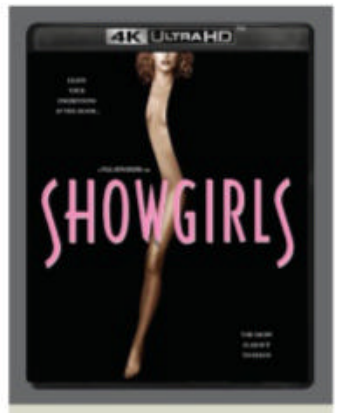
WHILE SOME marvel at *Showgirls*' "density of failure" and the poor decision-making that led to a none-too-shabby eight Razzie Awards, others see deeper meaning and mythic overtones (which may or may not actually be present), even viewing it as a modern fable of female empowerment. Love it, hate it or both, it's a trippy journey through the sleaziest corners of Las Vegas as the world's angriest stripper navigates hard luck and the surprising downside of sudden success. The characters are cartoonish, the dialogue is worse and the story stinks like last week's garbage, yet we keep coming back. Surely we must give much of the credit to star Elizabeth Berkley as Nomi, gyrating and convulsing her way into our hearts with an earnestness that belies the dubious script. It's not a musical despite all the dancing, kind of a melodrama for all the shouting, but surely an NC-17 indulgence that's earned a spot on many a shelf.

For its long-awaited Ultra HD debut, *Showgirls* has been newly restored by specialty label Vinegar Syndrome from a 4K master previously approved by director Paul Verhoeven and the results are outstanding. The high dynamic range and wide color gamut are a celebration of the neon lights of Sin City set against a backdrop of natural-looking nighttime blacks. As contributor Brandon DuHamel pointed out, the 2.39:1 image is sufficiently nuanced that we can even appreciate Ms. Berkeley's subtle heterochromia (look it up). D.P. Jost Vacano frequently employs a soft focus yet his cinematography surrenders ample detail — the small type of an admission date on a hospital bracelet is now legible — beneath a heavy layer of fine film grain.

As on releases past, the audio here is delivered as DTS-HD Master Audio 5.1, with generous surround activity for the bustle of the casino and with the occasional discrete placement of off-camera voices. The film's titular adults-only show allows the soundstage to realistically convey a cavernous, 360-degree room filled with music, effects, and a crowd of paying customers.. A lively dance club scene also displays appropriate bass levels.

The snarky archival audio commentary, "The Greatest Movie Ever Made," is preserved on both the 4K and the included HD Blu-ray. Video extras reside on a third disc, amassing quite a few interviews with various filmmakers plus enthusiastic aficionados, often discussing with fascinating, amusing seriousness the hard work that went into the ill-fated production. Not everything from the old MGM/Fox Blu-ray combo pack has been ported over here so take note, *Showgirls* completists. (They're out there!)

● **CHRIS CHIARELLA**



ULTRA HD 4K BLU-RAY
STUDIO: Vinegar Syndrome, 1995
ASPECT RATIO: 2.39:1
HDR FORMAT: HDR10
AUDIO FORMAT: DTS-HD Master Audio 5.1
LENGTH: 131 mins., NC-17
DIRECTOR: Paul Verhoeven
STARRING: Elizabeth Berkley, Kyle MacLachlan, Gina Gershon, Glenn Plummer, Robert Davi, Alan Rachins, Gina Ravera

PICTURE ★★★★½
SOUND ★★★★
EXTRAS ★★★

Vinegar Syndrome

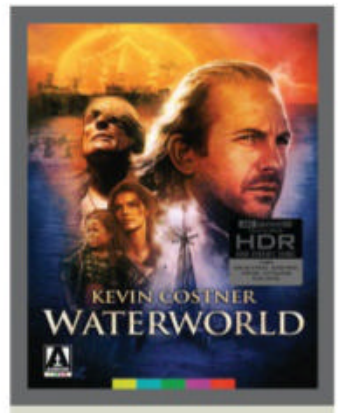
WATERWORLD

FUNNY HOW some movies debut to great negativity; either due to controversy or harsh criticism, possibly both; and yet possess that certain something that enables them to transcend over time. *Waterworld* is a fine example, plagued by countless production woes and subsequent budget overruns (it was allegedly the most expensive film in history at the time), considered a flop despite its big box office, and now years later a great many folks appreciate its charms and have even granted it cult status. It endures less as an aquatic, overblown *Road Warrior* retread and more as an epic adventure on the post-apocalyptic high seas. This time, the old civilization has ended with the melting of the polar ice caps, flooding the entire surface of the Earth, although legend tells of a tiny, difficult-to-find patch of dry land that could be mankind's last hope.

Arrow has undertaken an exclusive new 4K restoration, different from that found in Universal's barer-bones 2019 release. Detail is exceptional in the 2160p 1.85:1 image, the better to showcase the inspired production design and celebrate Dean Semler's often gorgeous cinematography. This is without a doubt one of the beigest movies we'll ever see, and the Dolby Vision HDR and wide color gamut ensure that each bleak, grimy aspect of the story is properly conveyed.

The included Dolby Atmos track (versus Universal's DTS:X) is a room-filling remix that more than adequately modernizes this mid-'90s blockbuster. Sloshing waves put us in the middle of the ocean with our heroes and villains, while the boats and more notably the many jet skis zip nimbly around the soundfield. Bass is potent right from the opening scenes and the large-scale action is enhanced with many subtle sonic cues amid all the mayhem. James Newton Howard's bouncy, catchy score adds a pleasing dimension.

Highlights of this three-platter limited edition include the three-hour U.S. TV cut of the film in HD, remastered from the best available elements, which adds back more than 40 minutes of rescued footage, albeit in exchange for some alterations made to meet broadcast standards. But take heart: Also here is the "Ulysses Cut" from European TV which integrates the extra scenes *without* censorship. (Its nickname draws from a deleted moment toward the end of the film.) The set impresses further with an archival behind-the-scenes documentary, multiple worthwhile featurettes, a beefy booklet, a poster and a set of miniature lobby cards inside a hefty cardboard slipcase. This is another standout package from Arrow, worthy of a place in your disc library. ● **CHRIS CHIARELLA**



ULTRA HD 4K BLU-RAY
STUDIO: Arrow, 1995
ASPECT RATIO: 1.85:1
HDR FORMAT: Dolby Vision, HDR10
AUDIO FORMAT: Dolby Atmos with TrueHD 7.1 core
LENGTH: 135 mins., PG-13
DIRECTOR: Kevin Reynolds
STARRING: Kevin Costner, Jeanne Tripplehorn, Dennis Hopper, Tina Majorino, Michael Jeter

PICTURE ★★★★½
SOUND ★★★★½
EXTRAS ★★★★

Arrow

TIME BANDITS

TIME BANDITS is a time traveling adventure set in an off-kilter world that is director Terry Gilliam's signature. A frenetic story that skips through various vignettes, it follows a young boy drawn into a journey with a group of renegade dwarves who use a special map to travel to different periods in time and steal treasures. In hot pursuit of the dwarves is the Supreme Being (Ralph Richardson) from whom the map was stolen.

During their journey, the time travelers cross paths with Napoleon (Ian Holm) who is suffering a severe case of ennui, the powerful King Agamemnon (Sean Connery) and a surprisingly snooty Robin Hood (John Cleese). They even have an encounter on the ill-fated Titanic. But famous historical figures and moments aside, the visual presentation of *Time Bandits*, its underlying commentary on the hypocrisy of the bourgeoisie, and the dark side of technology are what hold the film together. The main storyline of the pursuit by the Supreme Being to recover the map plays a secondary role to the hyperactive energy and witty dialogue delivered wonderfully by the star-studded cast.

Criterion Collection presents a 4K restoration of *Time Bandits* that was overseen by Terry Gilliam and scanned in 4K from its original 35mm camera negative. On the 4K Ultra HD disc, the film is presented at 1.85:1 HEVC 2160p with Dolby Vision HDR encodement and HDR10 metadata showing a MaxLL of 1000 nits and MaxFALL of 911 nits. There is thinly layered, filmic granularity that brings an ample amount of crisp detail and texture to the proceedings. The image is clean without being smooth and the Dolby Vision coding provides three-dimensional pop to flames and reflections on surfaces.

Time Bandits was originally exhibited in theaters in Dolby Stereo. Here, we get a straight stereo mix remastered in 24-bit from the 35mm magnetic track, presented in LPCM 2.0. The sound is weak, even given that this is an audio mix from a 1981 film. High frequencies are a bit shrill, the midrange and low-end sounds are anemic, and the mastered volume is exceptionally low. I had to increase the volume to 8db over my usual listening levels. On the plus side, the sound mix offers wide stereo imaging and intelligible dialogue.

The Criterion Collection includes their usual slate of compelling bonus features, including a 1997 audio commentary featuring Gilliam, co-screenwriter and actor Michael Palin, and actors John Cleese, David Warner and Craig Warnock. There is also an essay by David Sterritt on the reverse side of a fold-out map poster, among other extras. ● **BRANDON A. DUHAMEL**

4K ULTRA BLU-RAY
STUDIO: Criterion Collection, 1981
ASPECT RATIO: 1.85:1
HDR FORMAT: HDR10
AUDIO FORMAT: English LPCM 2.0 Stereo
LENGTH: 116 mins., PG
DIRECTOR: Terry Gilliam
STARRING: Sean Connery, Shelley Duvall, John Cleese, Ian Holm

PICTURE ★★★★★
SOUND ★★★½
EXTRAS ★★★★

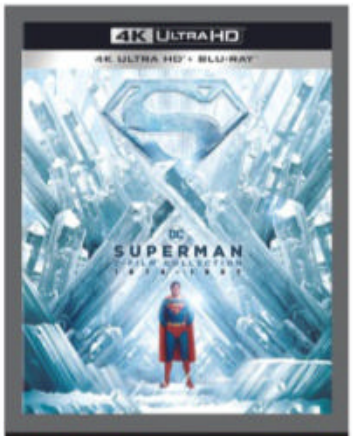
Criterion Collection

SUPERMAN 5-FILM COLLECTION

THE BIG BLUE BOY SCOUT REACHES NEW HEIGHTS IN 4K

TO GENERATIONS of fans the world over, Christopher Reeve simply *was* Superman. His look, his manner, his commitment to the dual role of lovable oaf Clark Kent of Smallville and Kal-El of Krypton defined the character and set the bar, perhaps impossibly high, for all who dared follow. And while these movies might not have always achieved that same high standard, Reeve et. al. have left a substantial cinematic legacy, commemorated in Warner's *Superman* 5-Film Collection.

The saga begins with a richly realized retelling of Kal's origin: escaping a doomed planet to begin a new life on Earth, and assuming the guise of a socially awkward but fleet-fingered journalist when he's not serving as our god-like protector. The first sequel sees three fellow refugees follow him to his new home, using their same uber-powers to conquer humanity, and massive conflicts ensue. *I* and *II* have their share of laughs certainly, but they were never comedies: *III* is supposed to be funny I guess, as Supes butts heads with a computer-enabled megalomaniac, but the "humor" has aged terribly. And the nonsensical *IV,* which introduces the nemesis Nuclear Man, created from sunlight and a strand of Superman's hair, aspires to do little more than fill its mercifully short runtime.



Superman 5-Film Collection

ULTRA HD 4K BLU-RAY
STUDIO: Warner
HDR FORMAT: Dolby Vision (*Superman* only); HDR10
AUDIO FORMAT: Dolby Atmos with TrueHD 7.1 core
RATING: PG
STARRING: Christopher Reeve, Margot Kidder, Gene Hackman, Marlon Brando, Terence Stamp, Richard Pryor

Much of *II* was shot by *I*'s director, Richard Donner, as part of a single elaborate production, but due to internal clashes, the movie was completed by director Richard Lester, who received sole credit. In 2006, the army of Donner loyalists received their wish and an approximation of what would have been his vision for *II* was assembled by editor Michael Thau and others. It's great to now have *Superman II: The Richard Donner Cut* on 4K but it's so rough in so many ways that it endures more as a "what if?" curiosity than a finished film. (This is the fifth film noted in the set's name.)

Superman was the only one released previously on 4K, in 2018, and this is not the same disc per se but it utilizes the same video master. Considering the deliberately soft photography and limitations of analog visual effects technology of the era, it's fairly gorgeous. I enjoy the amped up primary colors proffered by Warner, however watching all the movies back-to-back reveals some surprising inconsistencies. The bold red, yellow and blue of the Supersuit varies noticeably across the years when it really shouldn't, and sometimes there are color shifts within each movie, on the telltale tights and elsewhere. The wide shots of Smallville in *III* are lovely, and despite its irritating cheapness and looking like it was shot almost exclusively on overcast days, *IV* actually looks the best overall in terms of image detail and clarity... if we ignore the wonky VFX shots.

That 2018 *Superman* disc defaulted to a 5.1-channel Dolby Digital mix born of the six-track available in 70mm venues, but the new disc has dropped this and replaced it with a DTS-HD Master Audio 2.0 track that preserves the "Original Theatrical" mix heard in wide release. The four classic films offer such a lossless stereo option, and all five have Dolby Atmos with a TrueHD 7.1 core. The immersive remixes can be thrilling, occasionally overblown, enlivened by ample bass, some powerful explosions and directional whooshing takeoffs. The movies feature different iterations of John Williams' timeless musical themes, interpreted by different conductors and performed by different orchestras for a fractured sort of unity. Some minor errors were made in the music editing for some of these new mixes but it's nothing too worrisome.

Each film lands on 4K with an archival audio commentary by one or more of the filmmakers. The bundled HD Blu-rays include additional bonus content, all previously released, although past editions have contained more than is provided here, so collectors will likely want to hang onto their old discs. Each movie arrives in its own two-disc plastic case, all within a simple cardboard sleeve. Coattailing off of this set's hoopla, Warner has also given us (available separately) the 4K debut of *All-Star Superman*, possibly the best of DC's animated, direct-to-video Superman feature films; and the wonderful vintage Fleischer Superman cartoons, newly remastered in 16-bit 4K and presented at 1080p.

The *Superman* 5-Film Collection might not leap tall buildings or change the course of mighty rivers, but the prospect of owning the full Christopher Reeve catalog together in 4K for the first time, with Dolby Atmos plus original theatrical audio, sent me scurrying to pick it up faster than a speeding bullet.

● **CHRIS CHIARELLA**

Superman

YEAR: 1978
ASPECT RATIO: 2.40:1
LENGTH: 143 mins.
DIRECTOR: Richard Donner

PICTURE ★★★★
SOUND ★★★½
EXTRAS ★★★

Superman II

YEAR: 1981
ASPECT RATIO: 2.40:1
LENGTH: 127 mins.
DIRECTOR: Richard Lester (also Richard Donner, uncredited)

PICTURE ★★★★
SOUND ★★★★
EXTRAS ★★★

Superman II: The Richard Donner Cut

YEAR: 2006
ASPECT RATIO: 2.35:1
LENGTH: 116 mins.
DIRECTOR: Richard Donner

PICTURE ★★★★
SOUND ★★★★
EXTRAS ★★★

Superman III

YEAR: 1983
ASPECT RATIO: 2.40:1
LENGTH: 125 mins.
DIRECTOR: Richard Lester

PICTURE ★★★★½
SOUND ★★★★
EXTRAS ★★★

Superman IV: The Quest for Peace

YEAR: 1987
ASPECT RATIO: 2.40:1
LENGTH: 90 mins.
DIRECTOR: Sidney J. Furie

PICTURE ★★★★½
SOUND ★★★★
EXTRAS ★★★

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ERIC CLAPTON

THE DEFINITIVE 24 NIGHTS BOX SET

I hesitate using trendy acronyms when writing reviews—but in this case, saying I had a clear-cut case of FOMO when Eric Clapton's slightly misnamed *24 Nights* 2 CD clamshell collection first came out in October 1991 actually might be an understatement. The 15 tracks on that release—five culled from E.C.'s 18-night 1990 Royal Albert Hall residency in London, and the remainder from his 24-night 1991 stretch there—seemed more like a tease, considering I'd also seen and heard numerous other performances from both historic runs. Hence, I resigned myself to being somewhat content with what we got officially—at least, I did so at the time.

But now, E.C.'s 1990-91 live largesse at "The Hall" has gotten considerably fuller, thanks to Reprise—via their ongoing, and quite fruitful, partnership with

Rhino—having recently released what they're calling *The Definitive 24 Nights* in various formats. The two most desirable versions for us audiophile/collector types are the 8 LP/3 BD box set ($200) and the 6 CD/3 BD box set ($140). For those on tighter budgets, vinyl-only options have been released for the individually dubbed *Rock* ($50; 3 LPs), *Blues* ($40; 2 LPs), and *Orchestral* ($50; 3 LPs) sets accordingly, while 2 CD/1 DVD combo digipaks are also available for all three themed sets ($30 each).

Sadly, two tracks are missing from the *Orchestral* LP set—namely, "A Remark You Made" and "Sunshine of Your Love"—a decision probably made because of time restraints for a themed section already pushing the limit at six 140-gram vinyl sides. That said, a) it's a truly disappointing call since vinyl is *the* preferred format for paying customers these days, and only completists (like myself) will shell out for two box sets—but, thankfully, b) all 47 tracks (36 of them previously unreleased) *do* appear across the 3 BDs included in both boxes, so you *will* have access to every released track, either way.

I should point out the obvious LP/CD/BD track-count disparity comes from having "Sweet Home Chicago" and "You Better Watch Yourself (Reprise)" combined into one 8-minute cut on the second *Blues* LP (as Track 3 on Side 3), whereas they're listed as two separate tracks apiece on both the *Blues* CD2 *and* the overall BD2, respectively. Additionally, be aware the running order varies between the LP and CD editions, again most likely due to the time requirements per LP side.

The LP/BD box measures 12⅞ x 2⅛ x 12¾ inches (w/h/d) and is adorned with a sturdy, textured outer shell featuring the still-striking original *24 Nights* cover illustration by Peter Blake. (The comparable CD/BD box measures similarly.)

Included in both box sets is a 54-page hardbound book containing detailed liner notes by David Fricke as well as various full-page performance photos and Blake sketches—plus an individually numbered lithograph of a black-and-white E.C. live photo by Carl Studna. (I have No. 4387.)

Each LP resides in its own gatefold sleeve, though I do wish the outer covers were of sturdier stock and the inner sleeves were audiophile-grade instead of paper. (I replaced mine.) The 3 BDs all come in protective plastic holders but they can alternately be stored in their own, set-themed slimline cardboard sleeves, which can then be nestled within the three full slots cut into the box's inner back cover.

Here are my highlights of each themed section. On the *Rock* set, the 9-minute take on "Crossroads" offers more of a funky-shuffle feel to this perennial Robert Johnson classic—replete with occasional E.C. vocal whoops, no less!—something that may surprise listeners used to the song's more breakneck late-'60s live Cream versions. Also, I just can't get enough of the muscular workout that follows the totally silent break in "Bad Love." Over on the *Blues* set, E.C. and guest guitarists Robert Cray and Buddy Guy take a collectively tasteful yet guttural approach to "Have You Ever Loved a Woman," while Albert Collins adds his own brand of icy-hot axe fervor to "Reconsider Baby."

Finally, on the *Orchestral* set, conductor Michael Kamen shows why he and E.C. had such a creative mindmeld during their short-lived soundtrack work together. When Clapton commences the emotional solo that dominates the back half of "Holy Mother," the orchestral swells support and build upon his decidedly melancholy theme, never once overwhelming this stellar star turn.

Speaking of thematic mastery, Kamen's brainchild, "Concerto for Electric Guitar," is a full 29 minutes of a world-class orchestra uplifting and challenging a top-flight guitar maestro. Unfortunately, its length requires the multi-movement "Concerto" be split across the final two LP sides—but you can enjoy it uninterrupted on either comparable BD or CD (or both).

As it stands, *The Definitive 24 Nights* is a marked improvement over the abbreviated 1991 edition. Even so, I'd modify the title to read as *The* Somewhat *Definitive 24 Nights*, especially if the option of getting complete sets from *all* 42 Royal Albert Hall residency dates from 1990-91 inclusive is ever broached. Until then, this expertly expanded, premium pre-millennium live Eric Clapton collection is as *Definitive* as it gets. ● **MIKE METTLER**

8LP/3BD & 6CD/3BD

Label: Reprise

Audio Format: 24-bit/96kHz Dolby Atmos, 24-bit/96kHz stereo (BD); 16-bit/44.1kHz (CD)

Number of Tracks: 44 on 8LPs; 47 on 3BDs; 47 on 6CDs

Length: 5:50:50 on 8LPs; 6:01:13 on 3BDs; 6:01:13 on 6CDs

Producers: Simon Climie (producer and mixer), Martin Dacre (supervising producer), Michael Eaton (executive producer); Russ Titelman (tracks from the original 1991 *24 Nights* release)

Engineers: Alan Douglas (engineering and restoration), Simon Francis (mastering), Chris Bellman (vinyl mastering at Bernie Grundman Mastering, Los Angeles, California)

Performances ★★★★½
Sound ★★★★

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TEARS FOR FEARS: *SONGS FROM THE BIG CHAIR*

On the Line, One Open Mind

TEARS FOR FEARS vaulted into the international big leagues with the take-no-prisoners layered-sound approach to their February 1985 sophomore album, *Songs From the Big Chair*. It was a calculated production leap from the aural cocoon of their more minimalistic, electronic-leaning debut, March 1982's *The Hurting*—and it was a move that paid off handsomely with multiplatinum sales and upper-echelon chart domination around the globe.

"Once we had dipped our toe in the water, it set us on a course to have a much bigger, much more robust, and not-so-introspective sound," TFF guitarist/vocalist Roland Orzabal told me while we were discussing the album's 30th anniversary edition reissues back in late 2014. Orzabal and his TFF partner in creativity, bassist/vocalist Curt Smith, had each taken special note of the giant-sized production values Trevor Horn had deployed for Frankie Goes to Hollywood's October 1984 magnus opus *Welcome to the Pleasure Dome*, and they immediately knew they had to up their respective game.

Songs From the Big Chair was an early CD-era favorite disc alongside Dire Straits' own 1985 benchmark, *Brothers in Arms*, so I followed the physical digital trajectory of this release through a number of CD iterations over the years before eventually getting my hands on any *Big Chair* vinyl. I began with the initial 1985 Mercury Redbook CD, then incrementally added the 1998 Mobile Fidelity UltraDisc II gold CD, 1999 Mercury remastered CD, and 2006 Mercury Deluxe Edition 2CD set. The 2CD collection was a most worthwhile acquisition, as it added seven B-sides on Disc 1 plus seven 7-inch singles and five 12-inch singles on Disc 2.

These and other bonus cuts, remixes, and unreleased tracks also appear on the lavish 2014 30th anniversary 4CD/2DVD Mercury/UMG *Big Chair* box set—something that comes housed in what I'm calling the "mini-shoebox" format, which measures 5¾ x 1⅝ x 7¾ inches (w/h/d). Universal—and, to a lesser extent, Rhino—have released more than a few box sets in this size over the past decade-plus (albeit mainly in Europe), so shelving these mini-shoeboxes can become an issue if you haven't budgeted the space for them.

As for *Big Chair* vinyl, I finally picked up the 1985 Mercury LP for collector's purposes, and, not long ago, obtained the 2021 Mercury/UMG reissue pressed at Optimal in Germany. Hopefully, the UMG powers that be will see fit to enlist Miles Showell at Abbey Road Studios to do a half-speed-mastered 180-gram *Big Chair* LP, just as he recently did for the 40th anniversary of TFF's aforementioned debut, *The Hurting*.

Naturally, my preferred *Big Chair* listening experience is in surround sound—specifically via the 24-bit/96kHz DTS-HD Master Audio 5.1 mix courtesy of the ever-ubiquitous Steven Wilson as found on Universal's 2014 High Fidelity Pure Audio Blu-ray edition, which I defer to over the comparable DVD in the big box set. Both Smith and Orzabal very much favor the 5.1 version of *Big Chair* as well. "I love this mix," Smith confirms. "You get a far greater spectrum of sound, and the low end is definitely improved." Adds Orzabal, "It gives you a chance to see what we were doing sonically at the time—something that got lost in all the pomp and commercial success."

Indeed, all you have to do is cue up the surround mix of the thunderclap forcefield that is "Shout" to truly get the full effect of the five Lexicon digital reverbs Orzabal and original *Big Chair* producer Chris Hughes had co-opted for the track. Massive drums, insistent recurring triangle hits, and a volume-swelling back-half percussive payoff all add up to making this "Shout" a surround masterstroke. Other 5.1 highlights include a clearer presentation of Smith's throaty, well-enunciated lead vocal on "Everybody Wants to Rule the World" in the center channel, the rhythm section thrust of "Mothers Talk" that should put your sub channel on low-end-impact high alert, the clever call-and-response vocal placements during Verse 2 and all-channel "Hey Jude"-like singalong sequence on "Head Over Heels."

Given how good this decade-old surround mix is, UMG and TFF conscript Wilson to do a proper Dolby Atmos mix of *Big Chair*, just as he's done for *The Hurting* and is purportedly in the midst of completing for TFF's opulently grand September 1989 album, *The Seeds of Love*. At any rate, *Songs From the Big Chair is* a prime example of palette-expanding music from a British band positing the idea that, yes, while everybody wants to rule the world, Tears For Fears were among the only ones who actually did exactly that for a spell in those heady, MTV-dominant day-glo days of 1985. ● **MIKE METTLER**

1985 Mercury CD

2006 Mercury 2CD Deluxe Edition

2014 Mercury-UMG 4CD+2DVD Box Set

"2014 Universal High Fidelity Pure Audio Blu-ray

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